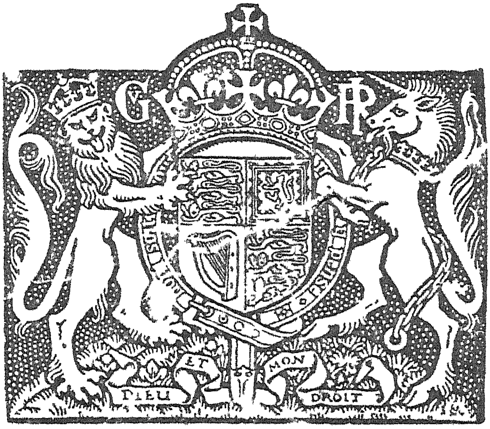

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PART XXIV.

1856.

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PROCEEDINGS

OF THE

ZOOLOGICAL SOCIETY OF LONDON

January 22, 1856.

Dr. Gray, F.R.S., in the Chair.

Mr. Yarrell stated to the Meeting that on the 3rd of January of the present year 1856, a great Bustard, *Otis tarda* of Linnæus, was taken in Berkshire. It was found about a mile from Hungerford, in the direction of Salisbury, by a boy, who observed that the bird had a broken leg, and could not, or did not, raise itself off the ground. He dragged it along by one wing to the farm to which he had been sent, where a man broke the bird's neck, that the boy might carry it back home the easier. The bird is now at Mr. Leadbeater's for preservation. It was a male, and appears to be in its second year.

The following papers were read:—

1. DESCRIPTION OF TWO NEW SHELLS DISCOVERED BY ROBERT MACANDREW, ESQ. ON THE COAST OF NORWAY. DESCRIBED BY ARTHUR ADAMS, R.N.

1. **SCALARIA LOVENII**, A. Adams. *S. testa pyramidali-turrita apice acuminata alba, anfractibus novem planiusculis, costis annularibus subdistantibus, angustis lamellatis recurvatis prope suturas latioribus et uncinatis costarum interstitiis valde spiraliter liratis, anfractu ultimo lira valida ad basin cincto; apertura rotundata.*

Hab. Ad litt. Scandinaviæ.

2. **TRIFORIS MACANDREÆ**, A. Adams. *T. testa pyramidali-turrita apice obtuso sinistrali tenuicula sordide alba, anfractibus quatuordecem rotundatis spiraliter liratis liris planis æqualibus subdistantibus (ad anfractum ultimum, sex) inter-*

stitiis sub lente longitudinaliter tenuissime striatis; apertura rotundata, canali brevi aperto.

Hab. Ad litt. Scandinaviæ.

2. DESCRIPTION OF THREE NEW VOLUTES FROM THE COLLECTIONS OF THE HON. MRS. CATHCART AND MR. CUMING. BY LOVELL REEVE, F.L.S. & G.S.

(Mollusca, Pl. XXXIII.)

1. VOLUTA CATHCARTIÆ. *Vol. testa cylindraceo-oblonga, basi recurva, spira brevi, apice papillari, anfractibus superne concavo-declivibus, deinde subplanatis; columella quadriplicata, plicis basin versus descendente; apertura elongata, subangusta, labio simplici, curvato; aurantio-fulva, nigricante-purpureo trifasciatim interrupte maculata, maculis valde irregularibus et varie nebulatis, anfractuum sutura peculiariter punctata et maculata.*

Long. 3½ poll.; lat. 1⅝ poll.

Hab. —— ?

This fine species of *Voluta*, from the collection of the Hon. Mrs. Macadam Cathcart, will not admit of defined comparison with any known species. It has somewhat the tone of colour and marking of *V. Pacifica*, but is of quite another typical form. The spire is short and largely papillary, and the plaits of the columella, four in number, descend elongately to the base.

2. VOLUTA AMERICANA. *Vol. testa subabbreviato-fusiformi, spira exserta, turrita, apice vix papillari, anfractibus superne concavo-angulatis, ad angulum tuberculis rotundatis, interdum in plicis descendentibus eleganter coronatis; columella superne arcuata, deinde callosa et quadriplicata, plica superna fere obsoleta, apertura subeffusa; pallida, fulvescente, aurantio-fusco trifasciatim interrupte maculata, et juxta suturam picta, interstitiis eximie reticulata.*

Long. 1¾ poll.; lat. ⅞ poll.

Hab. Brazil.

Of very characteristic form, faintly banded and reticulated with orange-brown; also in the collection of the Hon. Mrs. Macadam Cathcart.

3. VOLUTA AFRICANA. *Vol. testa ovata, subventricosa, spira exserta, apice subpapillari, anfractibus superne concavo-angulatis, ad angulum tuberculato-nodatis, nodis interdum in costis descendentibus, columella arcuata, basin versus biplicata, apertura subeffusa; fulvo-aurantia, lineis fuscis, punctis hieroglyphicis sparsim internotatis, in quaternis, fasciata, columella superne intense nigra.*

Long. 2½ poll.; lat. 1½ poll.

Hab. East coast of Africa.

This species, from Mr. Cuming's collection, partakes of the characters of *V. festiva* and *V. Hebræa*, but is of a totally distinct typical form, especially in respect of the columella, which is peculiarly arched, and has only two plaits at the base. The columella is stained at the top with the characteristic black spot of *V. festiva.*

3. NOTES ON THE SPECIES OF HIPPONYX INHABITING THE AMERICAN COASTS, WITH DESCRIPTIONS OF NEW SPECIES.

BY PHILIP P. CARPENTER.

The species of this genus have a helicoid apex when young, which is never persistent as in *Pileopsis* and *Calyptræidæ* proper. In many species the shape varies extremely, and is not to be taken alone as a specific distinction. The characters of the epidermis and basal margin are among the most constant.

1. HIPPONYX ANTIQUATUS, Linn.

Patella antiquata, Linn. Syst. Nat. p. 1259; Dillw. p. 1035, no. 44.

Le Soron, Adans. Sen. p. 32, pl. 2, f. 3 = *P. nivea*, Gmel.

Pileopsis mitrula, Lam. An. s. Vert. vii. p. 610, no. 2.

Capulus mitrula, Dunker, Ic. Moll. Guin. p. 36, no. 99. D'Orb. Sagra Moll. ii. p. 186.

Hipponyx mitrula, Sow. P. Z. S. 1835, p. 5.

Hipponyx antiquatus, Menke, Zeit. f. Mal. 1853, p. 79.

Concholepas antiquatus, H. & A. Adams, Gen. i. p. 373.

Hipponyx Panamensis, C. B. Adams, Pan. Shells, p. 218, no. 328.

Amalthea Panamensis, H. & A. Adams, Gen. i. p. 374.

Hab. West Indies, passim. W. Africa: Senegal, *Adanson*; Loander, *Tams*; St. Vincent, *Schmidt*. W. America: Lobos Island, Peru, *Cuming*; Panama, *C. B. Adams*.

Base rounded, not crenated; outside foliated, with faint radiating striæ. Deshayes (from descriptions) doubts the identity of the African and Caribbæan shells. Menke and Dunker confirm it: "possidemus hanc cochleolam e remotissimis terræ regionibus allatam" (*Dunker*). Sowerby's species was described from Pacific shells. C. B. Adams, for geographical reasons, doubts their identity, and names them *H. Panamensis*; "the apex being less prominent, the concentric laminæ more numerous, and the radiating striæ more deeply impressed." All these are very variable characters in the true *H. antiquata*, as well as in the Pacific specimens.

2. HIPPONYX SERRATUS, B. M. Cat. Mazatlan Moll.

H. foliaceus, Menke, Zeit. f. Mal. 1851, p. 36, no. 129, non Quoy & Gaim.

Outside like *H. antiquata*; base flattened, broad, with numerous serrated laminæ separated by brown epidermis in shreds. Muscular scar corrugated. This species is only yet known from Mazatlan.—*Lieut. Shipley; Brit. Mus. Coll.*

3. HIPPONYX BARBATUS, Sow. P. Z. S. 1835, p. 5. C. B. Adams, Pan. Shells, p. 217, no. 327.

Hipponyx australis, Menke, Zeit. f. Mal. 1847, p. 186, no. 38; non *H. australis*, Desh. (= *Patella australis*, Lamk.)

Outside with close radiating lines of bristly hairs; base round, smooth, crenated at the outer edge. The shell is quoted with doubt by C. B. Adams, because of the difference in zoological province.

Hab. Society Islands, *Cuming*; Panama, *C. B. Adams*; Mazatlan, *Brit. Mus. Coll.*; Atooi, Sandwich Islands, *Nuttall.*

3 (*b*). HIPPONYX ? BARBATUS, var. COSTELLATUS. *H. t.* "H. barbatæ" *simili; sed costis paucioribus, validioribus; apice subcentrali; setis minoribus, tenuioribus.*

Long. ·5; lat. ·42; alt. ·27 poll.

Hab. ? Ad insulas Maris Caribbæi.

This may prove a distinct species, but is only described from a single specimen in my collection, of which I can give no exact authority for the locality. It has the exterior of *H. Grayanus*, with the base of *H. barbatus.*

4. HIPPONYX (AMALTHEA) GRAYANUS, Menke, Zeit. f. Mal. 1853, p. 115.

Hipponyx radiata, Gray, P. Z. S. 1835. C. B. Adams, Panama Shells, p. 218, no. 329. Menke, Zeit. f. Mal. 1853, p. 79; non *H. radiata*, Quoy & Gaimard, 1824; nec *H. radiata*, Desh. 1830, (= *H. crispa*, Menke).

Hab. Gallapagos, *Cuming*; Sandwich Islands, on Pinna, *Nuttall*; Panama, *C. B. Adams*; S.W. Mexico, on Pinna, *P. P. C.*; Mazatlan, *Brit. Mus. Coll.*; St. Vincent (W. Africa), *Schmidt*, teste *Menke.*

Apex subcentral; ribs fewer, coarser and more nodulous than in *H. barbata*, with softer, smaller, fewer, and more irregular hairs; base flat, not very broad, rather rounded at the inner margin, crenated at the outer, with numerous lamellæ, undulated but not serrated.

5. HIPPONYX SUBRUFUS, Lam.

Pileopsis subrufa, Lam. An. s. Vert. vii. p. 611, no. 4.

Hipponyx subrufa, Sow. P. Z. S. 1835, p. 5. (Non *P. militaris*, Dillw., ut ?credit Desh.)

Capulus subrufus, D'Orb. Sagra Moll., ii. 186, pl. 24, f. 24, 25.

Hipponyx ——, sp. ind., C. B. Adams, Panama Shells, p. 217, no. 326.

Concholepas subrufa, H. & A. Adams, Gen. i. p. 373.

Lamarck's shell was described from W. Indian specimens, Sowerby's from Peruvian. There does not appear, however, any specific distinction between the two. Shell of a pinkish red, with full, recurved umbo, and finely cancellated surface; base round, simple.

Hab. W. Indies, passim; Lobos Island, Peru, *Cuming*; ? Panama, *C. B. Adams.*

The figure of *H. subrufus*, jun. in Sow. Thes. Conch. pl. 73. f. 21, is much more like the young of *H. barbatus.*

6. HIPPONYX TUBERCULATUS, n. s. *H. t. solida, conica, subrufa; apice subcentrali; costis radiantibus creberrimis, concentrice tuberculosis, interstitiis minimis; epidermide incon-*

spicua; basi lata, planata, lamellis creberrimis instructa, intus vix undulatis, ad marginem secundum costas externas undatis; cicatrice musculari lævi.

Long. ·48; lat. ·43; alt. ·17 poll.

Hab. Ad insulas Maris Caribbæi. In Mus. Brit.

The species is described from a specimen in my collection, but it exists unnamed in the British Museum. Outside somewhat like *H. Grayanus*, but with the ribs more crowded, with stronger tubercles, and without the scaly and hairy epidermis of that species; base broad and sharp at both edges, like *H. serratus*, but with the lamellæ not serrated or separated by epidermis, and with the muscular impression not corrugated.

7. HIPPONYX (AMALTHEA) EFFODIENS, n. s. *H. t. solidissima, depressa, albida viridi tincta; irregulari, apice subcentrali, seu vix monstrante; sulcis radiantibus altis, valde distantibus, circiter* XX. *ad* XXV.*; basi lata, non planata, intus rotundata, lævi, extus à sulcis dentata; cicatrice musculari longitudinaliter tenuissime striata; animali fossam altissimam alio in alio excavante.*

Long. ·52; lat. ·47; alt. ·13 poll.

Hab. Ad insulas Maris Caribbæi. In Mus. Brit. et Mus. Cuming repertura est.

Shell small, but enormously thick, and deeply cut by the few radiating furrows. Base rounded, toothed outside. Very deep excavations are made in the shells by younger specimens. Specimens much larger than those described are in Mr. M'Andrew's collection.

4. EXTRACT FROM A LETTER ADDRESSED TO ADAM WHITE, ESQ. BY MAJOR THOMAS HUTTON,—dated Mussoree, Nov. 27, 1855.

"In a box despatched from this to Calcutta on the 22nd inst., I enclosed a small packet for you containing living cocoons of *Actias selene*, in order that you may have an opportunity, if they survive the trip, of witnessing the mode in which the moth effects its escape, as I think the proceeding will be interesting to you and to entomologists generally. I have added two Cocoons in which the pupa is dead, in order to show you how distinctly visible are the wing spines, which formerly induced me to re-name the genus as '*Plectropteron*,' a term which I still think more applicable than *Actias*, in which the generic characters make no mention of the spine. As this instrument exists in both the species found in India, you will probably also detect it in *A. luna*, of America: and whether the generic name be changed or not, the characters must be revised. Before proceeding to separate the threads by the wing spines, I have ascertained that the Moth ejects from *the mouth* a few drops of a clear colourless fluid, with which the gum is dissolved, and it appears to use the tuft of down on the front, between the eyes, as a brush for the application of the solvent. This is a curious fact, as the genus, like *Saturnia*, is said to have *no mouth*! I believe the fact stands thus,—there is no mouth organized for the reception of *nourishment*, though sufficiently so to secrete the fluid in question; this you can ascertain by dissection; but that a fluid is ejected from that organ is a fact which I have repeatedly witnessed, and it is probable, therefore, that *Saturnia* and other genera secrete a similar fluid, and similarly apply it to the threads. I have neither *eyes* nor *glasses* adapted for anatomical dissection, but you will be able to follow up the hint here given. I long since wrote about the wing spine to Mr. Westwood, who, I believe, doubted the fact of its existence; but as I have here no opportunity of seeing what is said and done on these subjects, I know not how the matter ended."

February 12, 1856.

Dr. Gray, F.R.S., in the Chair.

The following papers were read:—

1. On a New Species of Pigeon.

By G. R. Gray, F.L.S. & Z.S., etc.

(Aves, Pl. CXV.)

As I believe the members of the Society take some interest in those birds which have passed a portion of their existence in the Gardens, I am induced to place before them a Pigeon, which I have every reason to suppose has remained hitherto undescribed. It belongs to the same division as the Garnet-winged Pigeon of Latham (*Columba erythroptera*, Gm.), which has been placed in Dr. Reichenbach's subgenus *Phlegœnas* by H. H. Prince Bonaparte; but I think that, considering the numerous divisions that have been formed in this class of birds, it might with equal propriety be divided from it.

I am led to consider that there exists some slight confusion in the description of the *Columba erythroptera*, which is stated by Latham (in his History, viii. p. 71) to come from the Isle of Eimeo, which he describes as having the "belly and vent black," but I think that this is a mistake; as I find amongst Ellis's drawings, made during the voyage of the great circumnavigator Cook in the year 1777–79, a representation of a Garnet-winged Pigeon that was found on "York Isle or Eimao," having those parts pure white, and that it even extends to the end of the under tail coverts and on the thighs.

Latham has further noticed two varieties, viz. that which forms his *var.* A. is from Otaheite, and the description was taken from the drawing of Forster, who also accompanied the same celebrated voyager during the years 1772–74, which exhibits the belly and vent as "dusky." Forster had applied the name of *C. leucophrys* to this bird, under which name the description will be found in his 'Descriptiones Animalium, &c.,' edited by Professor Lichtenstein, at p. 168; while the variety B. is stated to be from the island of Tanna, and is recorded as having a "reddish black" belly (the same colour as the back).

From these notices, there appear to be at least *two*, if not three species of Garnet-winged Pigeons; and may not they, like the *Ptilonopi*, be peculiar to the different groups of islands of the South Pacific Ocean? This, however, cannot be at present satisfactorily determined, from want of specimens from the different localities, but I have ventured to draw attention to these differences, that it may lead to a further elucidation when an opportunity offers.

I may add, however, that M. Temminck, in his work on Pigeons (t. 55), figures one that may probably come near to variety B. of Latham, but he describes the belly black with purple reflexions. The British Museum contains two specimens from Bow Island, which approach in some measure to the variety A. of Latham, but the belly is of a dusky greyish black.

The one now exhibited is quite different from those referred to; it may be described in the following terms, with the name of

CALŒNAS (PHLEGŒNAS) STAIRI. (Pl. CXV.)

Glossy brown, with coppery reflexions in some light; top of head and back of neck dark slate, glossy with green; front, side of neck and breast pale vinaceous brown; throat and a gorget round the breast white, which latter is margined outerly with dark garnet colour; abdomen vinaceous brown, dusky on the sides; quills dusky black, slightly margined with rufous; tail brown, with a broad band of black at the end. Bill black and feet pale.

The specimen is marked as a male, and I suppose was brought from the Samoan or Navigators' Islands, as the British Museum was previously in possession of a skin given by the Rev. J. Stair as from that locality, with other interesting birds.

2. ON A NEW SPECIES OF LEPIDOPTEROUS INSECT.

BY G. R. GRAY, F.L.S. & Z.S., ETC.

(Annulosa, Pl. XXXIX.)

Among the various novelties sent home during the voyages of H.M.SS. 'Rattlesnake' and 'Herald' by Mr. Macgillivray, is the splendid Butterfly now laid before the Society. It belongs to the great genus *Papilio* and to the subdivision *Ornithoptera*, and like the other known species of that group, its flight is very elevated; so much so, that it became necessary to employ powder and shot to secure the specimen; many shots have perforated the wings, and have rather damaged the specimen, but still not so as to entirely destroy the beauty of this remarkable butterfly. No lepidopterous insect of its magnitude has hitherto been known from the locality of this species; which, from the other insects contained in the same box, is supposed (as no memorandum was sent with it) to be either Solomon Islands, Aneiteum, New Hebrides or the Fiji group,—at any rate from one of the islands in the South Pacific Ocean.

The figure (Pl. XXXIX.) represents it of its natural size. The general colour is glossy bronze-black, with the two outer rows of irregular-sized spots of pure white, while those at the base of the fore wings are rich king-yellow, but partly pure white outerly; the anterior margin of the secondary wings narrowly bordered with king-yellow.

The under surface like the upper; but the anterior margin of the secondary wings broadly bordered, and some of the spots tinged, with rich king-yellow. The head and thorax pure black; the body ochraceous yellow above, and black along the middle beneath.

It is a female. The male remains at present unknown, but one may suppose, by the usual brilliancy of the males of this group to which it belongs, that it is likely to prove a most beautiful insect, exhibiting some gorgeous combination of colour.

The name I propose for this splendid insect is *Papilio* (*Ornithoptera*) *Victoriæ*.

3. DESCRIPTIONS OF SOME COLEOPTEROUS INSECTS IN THE COLLECTION OF THE BRITISH MUSEUM, HITHERTO APPARENTLY UNNOTICED. BY ADAM WHITE.

(Annulosa, Pl. XL. XLI.)

The number of "new species" of Coleopterous Insects in the Museum collection is in relative proportion to the great richness of the other branches. In this paper, some species belonging to the families *Prionidæ*, *Lamiadæ*, and *Cetoniadæ* will be given, as there is every likelihood, from the way in which these great groups have been investigated by Messrs. Serville, Burmeister, Schaum, Gory, and other entomologists, that the species are as yet unrecorded in scientific works; it is to the kindness of Dr. Gray, the keeper of the department, that I am indebted for permission in laying these descriptions before the Society.

Tribe LONGICORNIA.

Family PRIONIDÆ.

The *Prionidæ* consist of several marked subfamilies, in one of which we would place TRICTENOTOMA, G. R. Gray, one of the most interesting of the genera of Beetles. This form, which appears to me to be altogether Longicorn, is chiefly remarkable for its heteromerous tarsi, and for the ninth and tenth joints of its antennæ being serrated or produced at the end, almost as in the *Lucanidæ*. It is one of those "aberrant" forms which naturalists call "annectent," and which appear to partake of the characters of several groups,—for instance, with the depressed form and velvety pilosity of many *Elateridæ*, it has five joints to the two first pairs of legs, and four only to the hind pair. Its head, jaws, and legs are essentially Longicorn, the number of joints of the tarsi being not a necessary character of the group; the tarsi of *Parandra* are pentamerous, and *Dorx pentamera*, an Australian insect described by Mr. Newman, has likewise five joints to all the tarsi. The sternum of *Trictenotoma* is also peculiar, that of the prothorax being received into a notch of the mesothorax, while the sternum of the metathorax is capable of being firmly fixed by "dovetailing," as it were, into the hinder notch of the mesothorax; in fact, this structure must enable the insect, if placed on its flat back, to "right" itself, like those Beetles called "Skip-jacks" (*Elateridæ*). In some species, such as *T. Childrenii* (G. R. Gray), *T. Templetonii* (Westw.), and *T. Grayii* (F. Smith), the sternum of the metathorax bulges; in *T. ænea* (Parry) that part is flattened, and the thorax is curiously serrated on the lateral margin in front, and has a very projecting point on the side beyond the middle, and notched between that point and the posterior angle, instead of being nearly straight and simply angled as in the other three species. Of these *Trictenotomæ*, all the species described are in the Museum Collection; the *T. Childrenii* being the type female specimen from the Tenasserim coast, described by Mr. G. R. Gray in one of the two insect volumes of Griffith's edition of 'Cuvier's Animal Kingdom' (pl. 5 and 5*). The *T. Templetonii* of Westwood (Oriental Ent. tab. 23, f. 3) is a native of Ceylon; like the former, it has a yellowish-grey pile; the *T. Grayii* described by Mr. F. Smith in 1851 (Cat. Coleopt. Brit. Mus. *Cucujidæ*, p. 18) is from Borneo, and has a purplish base beneath the more tawny pile of the upper parts; in the Museum there are two females, one from the collection of Mr. Alfred Wallace, who obtained it at Sarawak. The *T. ænea*, the giant of the genus, is of a brassy green, slightly pilose above. The Museum has lately obtained a specimen from India; the specimen was found by a soldier at Dhargeeling.

To the same family, and not very remote from the subfamily containing *Spondylis* and its allies, belongs, in the opinion of Dr. Burmeister, Mr. Westwood, and Mr. Leconte, the very anomalous *Hypocephalus*, of which a fine figure, with some striking remarks, has been published by Mr. Curtis in the "Transactions of the Linnean Society;" of this species, three specimens known to me, exist in this country, one in Mr. Melly's great cabinet at Liverpool, a second drawn by Mr. Westwood in the 'Arcana Entomologica,' from a specimen in his own very curious collection, and a third exhibited at the Linnean Society in 1854, from the rare cabinet of Mr. Aspinall Turner of Manchester. This remarkable Prionidous insect, like the Mole-cricket, has been altogether constructed for a subterraneous life; its marvellously developed thorax, fossorial and burrowing legs, curiously defended head, abbreviated antennæ, and other characters well shown by Mr. Westwood, and particularly by Mr. Curtis, all mark this; just as *Dorysthenes* of the East, a burrowing insect, is shown by

M. Guerin-Meneville, to have Walrus-like jaws, as *Lethrus* has incurved mandibles and other features useful in supporting the creature in the holes of the ground whence it comes. As aberrant *Prionidæ* may be mentioned, the very curious genera *Torneutes*, Reich., described in the Trans. Ent. Soc. Lond. (ii. 9, t. 2, f. 7), of which three species are now known, one from Patagonia, described by M. Guerin, and the singularly interesting *Erichsonia* of Mexico, named by Mr. Westwood, in memory of that most laborious and scientific of all the German entomologists, Dr. Erichson. The genus *Thaumasus*, Reich. (Ann. Soc. Ent. Fr. 1853, p. 419), founded on what Olivier described as a gigantic species of *Ips* (*Ips gigas*, Journ. d'Hist. Nat. 1792, i. 267, pl. 14. f. 6; *Thaumasus g.* Reich. l. c. p. 422,.pl. 13. f. 4.), may be particularized as another aberrant form. In fact, the family *Prionidæ*, like many other great families, is more negative than positive, and will be found at its extremities, or at many points of its circumference, to lead off to other families, and even tribes: so that the naturalist, who wishes to simplify arrangement, however much he may split up genera, ought to avoid dividing families.

It may interest the general reader to quote a short passage from a privately circulated paper, written by my friend Mr. Empson of Bath, a distinguished natural-history traveller in South America. The insect alluded to is the noble *Psalidognathus Friendii* (G. R. Gray), which is named by the natives of Columbia 'Alaja,' that is, 'the jewel.' Mr. Empson remarks, "the first of these splendid insects which I ever saw, was at a feast given by the Cabildo, at Mariquita; upon that occasion Don Domingo Conde had placed one of them as a button to loop up, after the Spanish fashion, the broad brim of his Panama hat; to this brilliant ornament a loop of living Fireflies was attached, in a mode common in South America, and which does not injure those dazzling insect gems; thus decorated, the *sombrero* of the *cavalero* was more conspicuous in the ball-room than the jewelled tiaras of his more wealthy neighbours, although sparkling with the choice emeralds from the mines of Muzo.

"After many a weary search," adds Mr. Empson, "with Don Domingo for my guide, in the primæval forests on the eastern slopes of the Andes, we captured three of those Alajas." One of those, he remarks, "was resting on the perishing trunk of a palm-tree; in our eagerness to secure it, my hand was so much lacerated that I was obliged to relinquish my prize, and we saw its gorgeous colours flashing beneath the full blaze of a tropical sun; it settled on the stem of a cedar, and was then more cautiously transferred into my possession."

With these few remarks, which might be much amplified, a curious genus of *Prionidæ*, allied to *Psalidognathus*, G. R. Gray, and to *Prionacalus*, figured in a previous part of the Proceedings, may be here briefly described. It is strictly pseudo-tetramerous, and has much of the character of Mr. George Gray's fine Columbian genus. This genus, for which I would propose the name *Psalidocoptus**, is from Tana, in the New Hebrides, and is one of those fine insects for which science is indebted to the researches of Mr. John Macgillivray, the late able Naturalist of H.M. surveying ship 'Herald.' The sternum does not notably differ from that of *Psalidognathus*, but it differs in having very short palpi, much shorter antennæ, the third joint the longest, the eight following about equal in length. Head, exclusive of the jaws, rather longer than wide, behind the eyes somewhat narrowed and without projection. Eyes prominent, transversely kidney-shaped, very slightly notched in front. Thorax wider than long, but much longer than in *Psalidognathus* and *Prionacalus*, with three broadish spine-like projections on each side, one in front, one about the middle, and one before the hinder angle. Scutellum small and wide, covering the abdomen; in the male, considerably surpassing it. Wingless; elytra united on the suture, contracted some-

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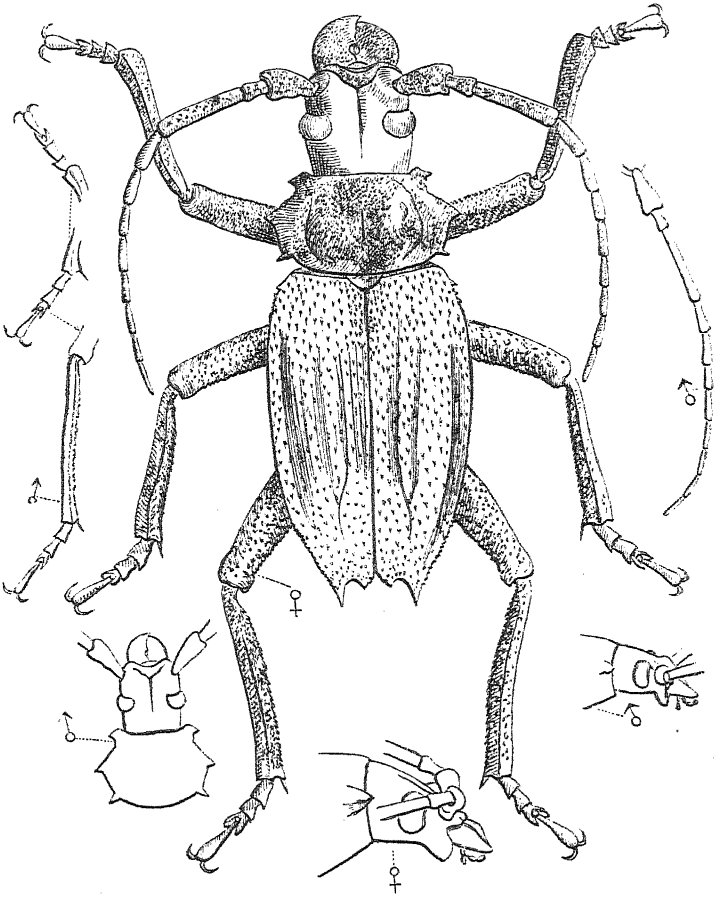
* Ψαλὶς, scissors, and *κόπτω*, from a fanciful idea of the waved outline being as it were cut with that instrument.



what at the base, where there is a short spine, gradually dilated about the middle, and as gradually tapering toward the end, where they terminate in two spine-like points, the outer the longest, the inner almost a continuation of the notch, between which would be the suture; the two points curiously rotundate-emarginate. Legs very long and strong, particularly the femora, which are compressed. Tarsi with small pulvillus on end of three first joints; tarsi of female broader and shorter than those of the male.

PSALIDOCOPTUS SCABER, n. s. (Fig. on p. 11.)

Head between the eyes with a deep line, divided into two in front. Thorax surface curiously undulated, and with the head scarcely rough, although with small scattered warts; the elytra scabrous, with numerous small warts; each elytron with two parallel ridges united behind the middle and a sutural ridge; margin of elytra between warty and serrated. Jaws strong, punctured at the base, incurved, sides parallel, inner side short and obliquely cut between, the cutting edge sharp; a curious tuft of ferruginous hair on trochanter; legs serrated below on femora and tibia, legs more or less scabrous. The whole insect is of a blackish-brown, with ferruginous hairs bordering the inside of the tibiæ of the first and second pairs of legs; thorax beneath, and other parts, liable to be chafed by motion of joints ciliated with ferruginous hairs. Abdomen somewhat squamoso-verrucose beneath, a pit behind each scale-like wart, with a short hair proceeding from it.

Note. The figures were drawn on wood by Miss E. Wing, and are of the size of nature.

Family LAMIADÆ.

Among the Lamioid Longicorns there is a genus containing many finely coloured African species. The genus *Tragocephala*, Dupont (Dej. Cat. p. 638), was first briefly characterized by Laporte in his 'Animaux articulées,' tome ii. p. 472.

TRAGOCEPHALA NOBILIS. *Lamia nobilis*, Fabr. S. El. ii. 297; Oliv. t. 11, f. 76; also described by Fabricius as *Saperda læta*, l. c. p. 318. Sierra Leone. (Coll. Brit. Mus.)

TRAGOCEPHALA FORMOSA. *Cerambyx formosus*, Oliv. t. 20, f. 153, is another well-marked species from S. Africa, abundant in collections. (Coll. Brit. Mus.)

TRAGOCEPHALA PULCHELLA, Westw. Arc. Ent. ii. t. 69, f. 4, is another species from Sierra Leone. (Coll. Brit. Mus.)

TRAGOCEPHALA VARIEGATA, Bertolom., Ann. Sc. Nat. 1845, p. 423. S. Africa (Inhambere).

TRAGOCEPHALA GALATHEA, Chevr., Rev. et Mag. de Zool. 1855, p. 184, was procured by the Scottish missionaries at Benin, Old Calabar.

The TRAGOCEPHALA ANGOLATOR and T. LUCIA, described by Olivier and Newman, belong likewise to this genus, but are aberrant forms, as is the TRAGOCEPHALA TRIFASCIELLA, described and figured

in the illustrated Proceedings for 1850. The latter differs somewhat from *Tragocephala* proper, while *Lamia angolator*, from its short wide thorax, &c., may hereafter constitute the type of a distinct section: all three are in the Museum Collection.

In the Museum Collection are some undescribed species, which may be characterized as

TRAGOCEPHALA COMITESSA. (Pl. XL. fig. 1.)

T. elongata, nigra; fronte aurantiaca; thoracis lateribus aurantiacis, post tuberculum nigris; elytris fasciis duabus sulphureis, lateribus aurantiacis; prima continua, secunda angustiore, antice et postice sinuata; elytris singulis punctis tribus albis; sutura apice albo-punctata, ante apicem macula aurantiaca margine pallidiore; metathorace maculis duabus aurantiacis, aliquando obsoletis; abdominis segmentis tribus basalibus lateribus subtus aurantiacis.

Long. lin. 9¼–11.

Hab. Africa Austr. (Port Natal). Coll. Brit. Mus. (*Gueinzius* et *Krauss*).

T. formosæ affinis sed distincta.

TRAGOCEPHALA CHEVROLATII, n. s. (Pl. XL. fig. 2.)

T. nigra, capite aurantiaco, mandibulis basi aurantiacis, fascia in genis, fascia inter antennas et vertice nigris; thoracis lateribus flavis, tuberculo apice et postice nigro; dorso nigro, macula parva pallida posticali alteraque antica sæpe obsoletis; elytris singulis nigris; fascia mediana aurantiaca subobliqua, ramum antice ferente; maculis duabus aurantiacis sæpe obsoletis, macula magna aurantiaca ante apicem, punctoque parvo ad apicem; abdominis lateribus aurantiaco maculatis; pedibus cinereo-griseis, femoribus flavo maculatis.

Long. lin. 8½–11.

Hab. Africa Austr. (Port Natal). In Mus. Brit., &c.

In honorem L. A. Augusti Chevrolat, Parisiensis, Coleopterophili valde egregii.

TRAGOCEPHALA DUCALIS, n. s. (Pl. XL. fig. 3.)

T. capite aurantiaco, fascia oculari, alteraque verticali nigris; antennis crassiusculis, nigris; thorace supra medio nigro, lateribus aurantiaco late marginatis, pube subvermiculata; elytris nigris fasciis duabus aurantiacis suturam haud attingentibus, lateribus latioribus, marginibus pallidis, apice aurantiaco, maculis tribus parvis inter apicem et fasciam secundam, exteriore majore; corpore subtus aurantiaco, abdominis segmentis, medio et lateribus nigris; pedibus ochraceo-griseis, femoribus extus et intus aurantiaco maculatis.

Long. lin. 8–9½.

Hab. Africa Austr. (Port Natal). Coll. Brit. Mus. (*Saunders*, &c.)

TRAGOCEPHALA GEMMARIA, n. s. (Pl. XL. fig. 4.)

T. nigra; lateribus frontis maculaque genarum et macula inter antennas pallide cæruleis; thorace supra maculis novem cæruleis, quatuor in margine antica, tribus in postica; elytris singulis maculis 12–13 *pallide cæruleis; thorace subtus et abdominis lateribus maculis cæruleis majoribus; pedibus posticis, femoribus extus, tibiis basi supra cæruleo-notatis; antennis articulo secundo compresso.*

Long. lin. 6½.

Hab. Africa Occid. (Sierra Leone) (*Rev. D. F. Morgan*). Coll. Brit. Mus.

TRAGOCEPHALA GUERINII. (Pl. XL. fig. 5.)

T. nigra, capitis thoracisque lateribus fascia flava continua, elytris fascia lata guttaque ante-apicali ferrugineo-ochraceis, mesothorace ferrugineo-ochraceo, medio nigro-lineato abdominis lateribus subtus fascia flava extus dentata.

Long. lin. 10.

Hab. Congo.

In honorem Guerin-Meneville, entomologi et carcinologi Parisiensis celeberrimi, naturæque delineatoris exquisitissimi.

TRAGOCEPHALA BUQUETIANA. *T. nigra, fronte macula elongata aurantiaca sub oculis ramum haud emittente; elytris singulis basi fascia aurantiaca obliqua, humero et spatio circa scutellum nigris; fascia mediana et macula sub-apicali aurantiacis.*

Long. lin. 8¼.

Hab. Sierra Leone (*Rev. D. F. Morgan*).

In honorem M. Buquet, Parisiensis, in Coleopteris exoticis ditissimi et peritissimi.

We have also in the Museum the elegant, slim, little graceful T. TENUICORNIS, Chevr., from Port Natal, the T. SCENICA of Dej., from W. Africa, and the T. PICTOR, Klug, a common S. African species.

Tribe LAMELLICORNIA.

Family CETONIADÆ.

Note.—Mr. Turner of Manchester, the possessor of a very fine collection of the larger and more showy *Coleoptera* of West Africa, and of many of the Beetles of other lands, showed me a specimen of the (so-called) *Goliathus giganteus*, of which I once saw the example in the Hunterian Museum at Glasgow, and which served to show that the sharp and discriminating eye of the able and judicious Dr. Schaum, who, with Dr. Burmeister, is one of the best authorities on the subject of *Cetoniadæ*, was probably right in regarding *G. giganteus* and *G. Drurii* as mere local varieties of one species, to which the name GOLIATHUS AFRICANUS, Lamarck, may be given.

TRIGONOPHORUS HOOKERI, n. s. (Pl. XLI. fig. 1♂. fig. 2♀.)

T. læte viridis, metallico valde refulgens pedibus gracilibus, femoribus viridibus flavescenti-rubro lineatis seu lavatis, tibiis rubris, *posticis intus ciliatis, tarsis fuscescenti-nigris; thorace antice angustato, supra dense punctulato, margine postica solum lævissima; scutello fere toto lævi; antennis subrufis, capite maris in fronte rufo.*

Hab. In India alpina.

The two figures represent this fine insect of the natural size. It is named after Dr. Joseph Hooker, F.R.S., &c. &c., author of many noble botanical works, and of the 'Himalayan Journal.' During his travels in India he found this and many other fine species of insects now in the Museum Collection. We have now all the species of this interesting group except *T. Delessertii*, Guerin-Meneville.

STETHODESMA SERVILLEI. (Pl. XLI. fig. 3.)

S. fusco-subpurpurea, sericea, thorace flavo cingulato, elytris singulis maculis decem parvis albo-argenteis, uropygio albo-maculato, subtus rufo-brunnea, plagis albis lateribus singulis in serie duplici ordinatis.

Hab. In Africa meridionali (Port Natal) (*Dr. Krauss*).

The red of the thorax extends on its under side. Mesothorax with scattered scales. Head cut in front, and side lobes produced shortly and somewhat rounded. Legs uniform in colour.

Huic insecto nomen *Servilleanum,* synonymon Entomologiæ, in honorem *Audinet-Serville* amici dilectissimi, proposuit descriptor.

CLINTERIA DUCALIS. (Pl. XLI. fig. 4.)

This insect, of which the name only appears in the Museum List of *Cetoniadæ*, p. 15, published in 1847, is regarded by Dr. Schaum as a variety of the very variable *Clinteria atra.* The present variety is of a dull olive-green, and has a patch of golden-yellow about the middle of each elytron. The under side is purplish-brown, and the sides have two rows of small white spots. The head and legs are purplish.

It is a native of Silhet, and notwithstanding the great authority of Dr. Schaum, I cannot help, even now, regarding it as distinct from *C. atra*, Wied., of which *C. funeraria* and *C. biguttata* of Gory and Percheron are varieties.

CLINTERIA HOFFMEISTERI. (Pl. XLI. fig. 5.)

This very beautiful and distinct species was described in the 'Annals and Mag. of Nat. History,' vol. xx. p. 341. It was named after the late lamented Dr. W. Hoffmeister, travelling physician to H.R.H. Prince Waldemar of Prussia. I well remember this amiable and able man during his several visits to the British Museum. He was struck by a grape-shot at the battle of Ferozeshah, on the 21st December 1845, when in close attendance on Prince Waldemar. The shot entered his temple. "He fell forward to the ground. The Prince instantly sprang from his horse and raised him, but the vital spark had already fled; at the same moment the advance of the forces rendered it necessary to move on. The slain were unavoidably left on the field of battle." He was laid (two days after) in the same grave "with several of his friends who fell on that bloody day, and a simple monument in the burial-ground at Ferozepore, erected by the Prince to the memory of his faithful physician and beloved companion, records his tragic fate, and marks his journey's utmost bourn*."

SCHIZORHINA BASSII. (Pl. XLI. fig. 8.)

This fine species, described in the 'Annals and Mag. of Nat. History' (vol. xx. p. 264), is figured here. The genus *Bassia* was *not* named after Mr. G. Bass.

SCHIZORHINA (HEMIPHARIS ?) EMILIA. (Pl. XLI. fig. 9.)

S. (*H.* ?) *nitida, subgracilis, subparallela, æneo-viridis, thoracis linea laterali, maculisque duabus postice aurantiacis* (*aliquando subobsoletis*), *elytrisque singulis lineatim punctatis, aurantiaco maculatis aut plagiatis.*

Animalculum hoc pulchrum, Febr. 2ndo, A.D. 1856, die nat. descriptum, Emiliæ Jalland, filiæ fratris mei, dicatum est.

Head rather closely punctured, very slightly notched in front, above distinctly punctured. Thorax indistinctly punctured, except before the hind angles, shaped much as in *H. insularis*, of a highly polished but obscure brassy green, thickened margin of thorax in front yellow, the yellow continuous (beyond the middle of the edge) on the inner side; thorax on each side with a narrow irregularly-edged yellow line, almost parallel with the edge, and truncated and somewhat dilated behind; before the posterior thoracic lobe are two small triangular yellow spots. Scutellum yellow; margins, especially at the apex, green; each elytron is irregularly margined with yellow on the sides at the base, and there are six to eight irregular yellow marks, one before the apex somewhat transverse; sides of meso- and metathorax yellow; sides of abdomen with three yellow spots; pygidium with two yellow marks nearly covering it, and divided by a pear-shaped green spot, or green extended so as to leave only four small yellow spots; tibiæ and tarsi tinted with purplish; base of anterior femora and coxæ rufous. This species quite connects the subgenera *Hemipharis* and *Diaphonia*, and shows the accuracy of the views of that learned entomologist Dr. Schaum. The two specimens are females, and have short lamellæ to the antennæ.

Hab. New Hebrides (Aneiteum). Collected by Mr. John Macgillivray, the able naturalist to H.M.S. 'Herald.'

SCHIZORHINA (HEMIPHARIS) IDÆ. (Pl. XLI. fig. 7.)

S. (*H.*) *grandis, fusculo-nigra, capitis vertice, thorace supra, elytris a basi, usque ultra medium, pygidio, mesothoracis lateribus, metathorace femoribus posticis infra flavescenti-brunneis.*

S. (*H.*) *Brownii* valde affinis et forsan varietas geographica. Dicatur Idæ Pfeiffer, viatricis celeberrimæ quæ in Ceram speciem hanc pulchram invenit.

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* 'Travels in Ceylon and Continental India,' translated from the German. Edinburgh, 1848. A very graphic work, consisting of the letters chiefly of that talented man, who fell at Ferozeshah.

CETONIA (PROTÆTIA) PROCERA, n. s. (Pl. XLI. fig. 6.)

C. (P.) supra viridi-subsericea, poroso-punctata, albido paululum submaculata in elytris præsertim, elytris apice spinoso-productis; subtus læte metallico-viridis, abdomine plagis 16 *albopilosis, in quatuor ordinibus dispositis.*

In size between *P. ferruginea* and *P. regalis*; above, including upper side of legs, it is of a fine dull, dark velvety green, which, when rubbed, displays beneath a metallic base, as in many of the *Cetoniadæ*, such as *Goliathus torquatus*; the edges of the *nasus* are metallic. The head and thorax above are thickly and distinctly poroso-punctate; there is an indication of a yellowish-white dot near each front angle of the thorax (which dot may vary in size in other specimens); the elytra have four dots passing into short transverse streaks on each side, and a small spot near the suture, about the middle, and a short white streak midway between the middle and the spine; three dots between that and the spine, which is longer and much more distinct than on the sides of elytra, transversely pitted in many shallow short waves; general surface punctured, the punctures chiefly in striæ. Head small, slightly ridged on sides in front of eyes, slightly narrower in front, and rather deeply grooved behind front margin. Under side and legs metallic green, femora and mesothorax acuducted, the latter with two or three patches of isabella pile; abdomen irregularly punctured, smooth, with eight transverse patches of isabella pile on each side in double columns. Hairs on tibiæ rufous; fore edge of front tibiæ and tarsi of all the legs metallic green.

Hab. Philippine Islands. (Coll. Cuming.)

N.B. The figures are of the natural size.

This is alluded to in Dr. Schaum's second list of *Cetoniadæ*, and is quoted under the above name.

CETONIA (PROTÆTIA) SCHAUMII. (Pl. XLI. fig. 10.)

Supra obscure viridis, subtus læte metallico-viridis, capite flavo trilineato, linea media latiore, thoracis marginibus anticis lateralibusque flavis, plaga transversa subheraldice postica flava, scutello flavo apice excepto viridi; elytris flavo irregulariter transverse trifasciatis, elytris singulis medio longitudinaliter sub-bicarinatis, et 9–11*-punctato-lineatis, pedibus flavis, extus et apice articulorum subviridibus, tarsis obscure viridi-fuscis, abdominis lateribus subtus punctatis, segmentis quatuor lateribus flavo-marginatis; uropygio flavo triangulariter biplagiato elytris apice suturali acuminato, sterno antice flavo producto.*

Hab. Celebes (*Madame Ida Pfeiffer*).

Head semicircularly cut in front, the margins trending inwards.

Seems really to connect *Pachnoda* with *Protætia.*

Named in compliment to Dr. Schaum, whose name and abilities require only to be mentioned when *Coleoptera* are described.

The figures are of the size of nature.

4. NOTE ON THE ZOOLOGICAL APPENDIX TO THE 'REPORT OF THE U.S. NAVAL ASTRONOMICAL EXPEDITION TO THE SOUTHERN HEMISPHERE,' AND ON THE GEOGRAPHIC RANGE AND DISTRIBUTION OF THE TANAGRINE GENERA CALLISTE AND EUPHONIA.

BY PHILIP LUTLEY SCLATER, M.A., F.Z.S.

The second volume of the 'Report of the U.S. Naval Astronomical Expedition to the Southern Hemisphere,' of which copies have lately been received in this country, contains a very valuable account of the specimens of natural history collected by the Expedition in Chili. Each section of the Zoology appears to have been assigned to the person best qualified to undertake it. The Ornithological part (by Mr. Cassin) is illustrated by some very nicely coloured plates, and contains a list of the Birds of Chili, with many interesting notes on their native names, habits, &c.

What I particularly wished to notice, however, was, that there are three species of Tanagers—*Callistæ cyaneicollis* and *gyroloides* and *Euphonia rufiventris*—included in this list, and apparently intended to be represented as inhabitants of the republic of Chili. Now I have always supposed, and still believe it to be the case, that these genera of Tanagers do not extend on the western side of the Andean range nearly so far south as that country. Indeed Tschudi and D'Orbigny assert that they are only found in the wood regions of Peru and Bolivia on the eastern slope of the Andes, and I have never seen examples of birds belonging to either of these genera in Chilian collections; nor are they, or other similar tropical forms, mentioned as occurring there by the several previous writers on the zoology of that country. Under these circumstances I cannot help thinking there must have been some error with regard to the locality of the specimens of these Tanagers procured by Lieut. Gillis's expedition.

I may remark at the same time that the bird figured in this same work, pl. xviii. fig. 2, as a companion to *Calliste cyaneicollis*, is not *Calliste larvata* (Du Bus), but *Calliste thalassina*, Strickland (*Aglaia Wilsoni*, Lafr.—Des Murs, Icon. Orn. pl. 56. fig. 2).

The appended Table shows the distribution of the species of the genus *Calliste* as far as I have been able to collect information on the subject. It will be observed, that only one of this genus has yet been found north of the isthmus of Panama, though very possibly new species are yet to be discovered in the unexplored parts of Central America. The metropolis of this group seems to be the wood regions of New Grenada, Ecuador, Peru and Bolivia; but we require much more information concerning the local faunæ of this great continent before very accurate statistics can be drawn up of the geographical distribution of these and other forms of animal life.

	Central America.	NewGrenada.	Quixos in Ecuador.	Vicinity of Quito.	Eastern Peru.	Cisandean Bolivia.	Venezuela.	Trinidad.	Brit. Guiana.	Cayenne.	Prov. Rio Negro.	North Brazil.	South Brazil.	Paraguay.
1. *tatao*	...	...	...	...	...	...	...	...	*	*	*	...	...	...
2. *cœlicolor*	...	*	...	...	...	...	...	...	...	...	...	...	...	...
3. *yeni*	...	...	...	...	*	*	...	...	...	...	...	...	...	...
4. *tricolor*	...	...	...	...	...	...	...	...	...	...	...	...	*	...
5. *festiva*	...	...	...	...	...	...	...	...	...	...	...	...	*	...
6. *fastuosa*	...	...	...	...	...	...	...	...	...	...	...	*	...	...
7. *cyaneiventris*	...	...	...	...	...	...	...	...	...	...	...	...	*	...
8. *aurulenta*	...	*	...	*	...	...	...	...	...	...	...	...	...	...
9. *Sclateri*	...	*	...	...	...	...	...	...	...	...	...	...	...	...
10. *pulchra*	...	...	*	...	*	...	...	...	...	...	...	...	...	...
11. *Arthusi*	...	...	...	...	...	...	*	...	...	...	...	...	...	...
12. *icterocephala*	...	...	...	*	...	...	...	...	...	...	...	...	...	...
13. *thoracica*	...	...	...	...	...	...	...	...	...	...	...	...	*	...
14. *Schranki*	...	...	*	...	*	*	...	...	...	...	...	...	...	...
15. *guttulata*	...	...	...	...	...	...	*	*	*	...	...	...	...	...
16. *punctata*	...	...	...	...	...	...	...	...	...	*	...	...	...	...
17. *rufigula*	...	...	...	*	...	...	...	...	...	...	...	...	...	...
18. *xanthogastra*	...	*	*	...	*	...	...	...	...	...	...	...	...	...
19. *graminea*	...	...	...	...	...	...	...	...	...	*	...	...	...	...
20. *ruficapilla*	...	*	...	...	...	...	...	...	...	...	...	...	...	...
21. *cayana*	...	...	...	...	...	...	...	...	*	*	...	...	...	...
22. *cyanolæma*	...	...	...	...	...	...	...	...	...	...	*	...	...	...
23. *castanonota*	...	...	...	...	...	...	...	...	...	...	...	...	*	*
24. *peruviana*	...	...	...	...	...	...	...	...	...	...	...	...	*	...
25. *flava*	...	...	...	...	...	...	...	...	...	...	...	...	*	*
26. *cucullata*	...	...	...	...	...	...	*	...	...	...	...	...	...	...
27. *cyanoptera*	...	...	...	...	...	...	*	...	...	...	...	...	...	...
28. *larvata*	*	...	...	...	...	...	...	...	...	...	...	...	...	...
29. *lunigera*	...	...	...	*	...	...	...	...	...	...	...	...	...	...
30. *Parzudakii*	...	*	*	...	...	...	...	...	...	...	...	...	...	...
31. *chrysotis*	...	...	...	...	*	...	...	...	...	...	...	...	...	...
32. *gyrola*	...	...	...	...	...	...	...	...	*	*	...	...	...	...
33. *Desmaresti*	...	*	*	...	*	*	...	...	...	...	...	...	...	...
34. *gyroloides*	...	...	...	...	...	...	*	*	...	...	...	...	...	...
35. *brasiliensis*	...	...	...	...	...	...	...	...	...	...	...	...	*	...
36. *flaviventris*	...	...	...	...	...	...	...	*?	*	*	*	...	...	...
37. *boliviana*	...	*	...	...	*	*	...	...	...	...	...	...	...	...
38. *inornata*	...	*	...	...	...	...	...	...	...	...	...	...	...	...
39. *atrocærulea*	...	...	...	...	*	*	...	...	...	...	...	...	...	...
40. *ruficervix*	...	*	...	*	...	...	...	...	...	...	...	...	...	...
41. *atricapilla*	...	*	...	...	...	...	*	...	...	...	...	...	...	...
42. *argentea*	...	...	...	...	*	...	...	...	...	...	...	...	...	...
43. *nigro-viridis*	...	*	...	*	...	...	*	...	...	...	...	...	...	...
44. *thalassina*	...	*	*	...	*	...	...	...	...	...	...	...	...	...
45. *cyaneicollis*	...	*	*	...	*	*	...	...	...	...	...	...	...	...
46. *labradorides*	...	*	...	...	...	...	...	...	...	...	...	...	...	...
47. *xanthocephala*	...	...	...	...	*	*	...	...	...	...	...	...	...	...
48. *venusta*	...	*	*	...	...	...	...	...	...	...	...	...	...	...
Total.....	1	16	8	6	12	7	7	3	5	6	3	1	8	2

5. On the Genus Assiminia (Leach).

By Dr. J. E. Gray, F.R.S., P.B.S. etc.

In a list of some species of British shells at the end of an arrangement of Mollusca in the 'London Medical Repository' for 1821 (vol. xv. p. 239), I noticed a new mollusk under the name of "*Nerita* (*Syncera*) *hepatica*, n. s. The animal of this shell differs from all others of this order by the eyes appearing to be at the end of the tentacula, but I believe that they are placed on a peduncle as long as the tentacula, and the peduncle and tentacula are soldered together."

Dr. Leach, when he examined the animal of this shell, formed it into a genus under the name of *Assiminia*, and named the species after myself as *A. Grayana*, described under this name at the end of the genus *Limnea*, in Fleming's 'British Animals,' p. 275 (1828), who observes, "Dr. Leach sent me several years ago a shell from Greenwich marshes, constituting a new freshwater genus, under the title *Assiminia Grayana*. The lip is thickened on the pillar and reflected over the cavity, but is destitute of the oblique fold, and the lip does not extend over the body whorl. The colour is brown; whorls six in number, conical, regularly increasing in size, glossy, with minute lines of growth. Length about $\frac{2}{10}$ths of an inch."

In my paper "On the Difficulty of distinguishing certain genera of Testaceous Mollusca by their Shells alone, and on the Anomalies in regard to Habitation observed in certain species," published in the 'Philosophical Transactions' for 1835, p. 301, I observe: "About fifteen years since I first observed in the marshes near the bank of the Thames, between Greenwich and Woolwich, in company with species of *Valvata*, *Bithynia* and *Pisidium*, a small univalve shell, agreeing with the smaller species of the littoral genus *Littorina* in every character both of shell and operculum. Yet this very peculiar and, apparently, local species has an animal which at once distinguishes it from the animal of that genus and from all Ctenobranchous Mollusca. Its tentacula are very short and thick, and have the eyes placed at their tips, while the *Littorinæ*, and all the other animals of the order to which they belong, have their eyes placed on small tubercles on the outer side of the base of the tentacles, which are generally more or less elongated. The shell in question and its animal were described and figured by Dr. Leach in his hitherto unpublished work on British Mollusca, under the name of *Assiminia Grayana*, and as this name has been referred to by Mr. Jeffreys and other conchologists, it may be regarded as established, and that of *Syncera hepatica*, proposed by myself in the 'Medical Repository,' vol. x. p. 239, will take rank as a synonym. A second species of this genus has lately been made known by Mr. Benson, by whom it was found on the ponds in India. Its shell is banded like that of *Littorina* 4-*fasciata* and several other smaller *Littorinæ*, and has been figured in the Supplement to 'Wood's Conchology,' t. 6. f. 28, under the name of *Turbo Francesiæ*."

In my edition of 'Turton's Manual,' 1840, p. 88, I characterize the genus thus:—*Assiminia*: Shell ovate, conical, solid; mouth ovate; tentacles very short, scarcely longer than the tubercles on which the eyes are placed, and united to their side, p. 78, f. 4, 5, 6, observing, "the animal differs from *Littorina* in the apparent position of the eyes, which is an anomaly among the water and Ctenobranchous Mollusca;" and after quoting Mr. Berkeley's description of the tentacula I observe,—"I am inclined to retain my former theory, for if the pedicel of the eye of this genus is minutely examined, it will appear to be formed of two parts united by a suture."

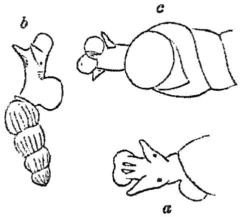
In 1852, having obtained permission of the family, I printed Dr. Leach's 'Molluscorum Britanniæ Synopsis' above referred to, and he there described the genus—"ASSIMINIA. Testa conica, spira mediocris. Animal tentaculis duobus brevibus, apice paulo angustioribus obtusis, ad apicem oculigeris, instructum; oculi parvi, rotundi; operculum tenue."

"From the form of the shell this genus might be considered as belonging to the second stirps (*testa conica, spira brevis*), but the animal proves that it is more nearly allied to *Sabanæa* than to any other of the British genera." (p. 155. t. 9. f. 4, 5.)

Lately some doubt has been attempted to be thrown on the distinctness of the genus, which it has been proposed should be united to the genus *Truncatella* of Risso.

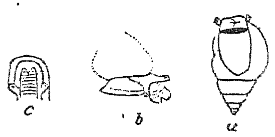
Considering the very great similarity which often exists in the general appearance of the animals of very distinct genera of Mollusca,—a similarity so great, that if a person was to place before me, without the shell or operculum, the animal of the genera *Murex, Triton, Purpura, Fasciolaria, Columbella*, &c., I should not be able to distinguish one from the other without the examination of the teeth or the lingual membrane, and that would only enable me to separate *Triton, Cassis* and *Fasciolaria* from each other and from *Murex, Purpura* and *Columbella*, and not the three latter genera from each other; and it is the same with the animals of several other orders and families;—yet the animals of the two genera *Assiminia* and *Truncatella* (see figs. 1 and 2) proposed to be united, are so unlike in general ap-

Fig. 1.



1. *Truncatella truncatula* β.
a. With foot extended, in the act of drawing up the shell.
b. Side view.
c. Seen beneath as crawling up a glass, when the muzzle is exserted.

Fig. 2.



2. *Assiminia Grayana.*
a. Under side of animal and shell.
b. Side view.
c. Front of foot, showing how the lower lamina of the foot projects beyond the upper.

pearance, minute structure and habit, that it is extraordinary that any person should have made the proposal.

I think the best way to show the distinction of these two genera will be to copy, in addition to the extract already given, the figures (see figs. 1 and 2) and descriptions of the animals given in different authors, commencing with Mr. Lowe, who has figured and described the animal of *Truncatella* in the fifth volume of the 'Zoological Journal,' and Mr. Berkeley's description and figure of the animal of *Assiminia*; then the description of the animal of the Indian species of the latter genus, both printed in the volume above referred to; and, lastly, some extracts of additional peculiarity of the genus *Truncatella*, observed by Mr. Clark, and published in his work on British Mollusca.

"1. TRUNCATELLA. R. T. Lowe, Zool. Journ. v. 299. t. 19. f. 4.

"*Tentacula* (2 *contractilia*) *cylindrico-conica, brevia, obtusa, basi distincta, proboscide separata; oculis sessilibus paullo supra basis angulum externum positis. Caput proboscidiforme exsertum. Os ad extremitatem proboscidis cylindricæ, inter tentacula exsertæ, disciformem, supra emarginatam (sc. bilobam, ob buccas labiales in proboscidem ipsam coadunatas vel commutatas). Pallium collare siphone nullo; orificio ad dextrum corporis ut in* Helice, Melampode, Pedipede, *&c. Pes rotundatus vel ovalis, brevis, minimus, posticus. Operculum corneum simplex, i. e. non spirale, ovale, aperturam testæ omnino claudens. Testa turrita; adulta cylindrica, decollata vel truncato-obtusa; anfractibus distinctis, vel lævibus vel transverse costatis. Apertura ovalis, brevis; peritremate continuo. Labrum simplex. Epidermis nulla.*

Animal littorale, amphibium, sed revera marinum et branchiis spirans. Ingredienti, discus terminalis proboscidis pro pedis parte antica servit; itaque modo fere larvarum Phalænidarum Geometrarum gradibus alternis incedit. Testa junior, tereti-acuminata, e pluribus anfractibus quam adulta constat; prioribus in plerisque demum (ut in Hel. Bulimo decollato) *defractis, truncata evadit.*

"It is now nearly three years (1829) since the acquisition of a single live specimen of *Cyclostoma truncatulum*, Drap., and a long and continued observation of its animal, convinced me that it was entitled to rank as a distinct genus from any which were then constituted. I had accordingly designated it in my MSS. by the generic name of *Herpetometra*; derived from its peculiar manner of crawling. This appellation I had since purposed changing into *Truncatella*, the very name by which I find the self-same species designated by Risso in his 'Histoire Nat. &c. de l'Europe Méridionale.' In this work, however, the genus rests, like very many others of the same writer, on most unsubstantial ground, the animal being entirely neglected."

"ASSIMINIA. Berkeley, Zool. Journ. v. 429. t. 19. f. 4.

"*Voluta denticulata*, Mont. (*Carychium Myosotis*, Michaud, Compl. de l'histoire de Drapard.), and *Assiminia Grayana*, Leach, abound under stones in the salt marshes by the Thames at Gravesend.

Having an opportunity of examining both in a living state in the summer of 1832, I was surprised to find manifest indications that both were pulmoniferous, which were confirmed on a minute inspection of the internal structure, as far as perhaps could be expected in such small animals. I was enabled in the former to trace distinctly the course of the vessels, and was decidedly of opinion that the lungs were constructed for the breathing of air unmixed with water. In the other case I was not so successful, though the utmost pains were taken; but as the animal is only half the size, the difficulty was much increased. I am enabled, however, to assert, that I could detect nothing like branchiæ; and what is more to the point, that the vault of the cavity of respiration was traversed by a multitude of minute vessels all tending one way towards a large vessel running down in the direction of the heart, which is exactly the structure in *pulmoniferous Mollusca.* This, perhaps, will be esteemed as decisive when the external characters of the animal are taken into consideration."

"ASSIMINIA GRAYANA.

"Foot broadly obovate, obtuse, composed evidently of two distinct laminæ, the lower projecting beyond the upper, and separated from it by an accurately defined line; above fuscous, beneath olivaceous, shaded with cinereous. Tentacula very short and obtuse, fuscous; eyes at the tips. Muzzle porrected, not truly proboscidiform, deeply notched in front, fuscous, strongly annulated; the edge of the lip paler; on each side is a groove running backwards from the base of the tentacula. Mantle open behind. Fæces elliptical (as in *Cyclostoma*). Operculum corneous, ovate, spirally striated. The most remarkable circumstance in this animal is the position of the eyes, at the tips of the tentacula, as in *Helix* and its allies, and not at the base. It would appear as if there were in reality no tentacula, and only the tubercle common to many Mollusca at the base of the tentacula a little more developed than usual. The shell is so like that of some species of *Rissoa,* that it is quite surprising that in Dr. Fleming's 'British Animals,' and in Mr. Jeffreys' paper in the 'Linnean Transactions,' it should be placed in, or close to, the genus *Limnæa.* Dr. Leach seems to have formed his conclusions from an actual inspection of the animal, and consequently made a distinct genus for its reception. In many points the animal resembles very much that of *Cyclostoma,* and is perhaps a step nearer than that and *Helicina,* which have the mantle open behind to the *pectinifera.* Its nearest ally, however, amongst the *pectiniferous Mollusca* I should conceive not to be *Rissoa.*

"The animal and shell are figured in Forbes and Hanley's 'British Mollusca,' iii. 70, t. 71. f. 3, 4, and t. H.H. f. 6.

"Mr. Benson, at page 463 of the same volume of the Zool. Journ., has given the following description of the animal of *Assiminia fasciata* (*Turbo Francesii,* Gray, in Wood's Supplement, t. 6. f. 28): —"Animal: Head with only two short, thick, subcylindrical tentacula, with the percipient points placed at their summits. Snout, like that of *Paludina,* transversely corrugated and bilobed, or rather emarginate at the centre of the extremity, the lobes rounded. Mantle free, and branchial cavity open. Foot with a spiral horny operculum, angular at the upper part."

I may add to these descriptions that Mr. Clark has lately stated that the tentacula of *Truncatella Montagui* are "short, flat, broad, triangular, and diverge greatly, scarcely forming an angle of 25°. The eyes are large and black, and have white prominent pupils, which visibly dilate and contract. I have never observed such in any mollusk, though similar ones may have escaped notice; they are placed a little nearer to the base than the middle of their lower half, not on pedicles, but quite flat on the centre of semicircular expansions of the outer side of the tentacles, with an external tendency. The branchial plume is single, of an elongated, kidney-shaped figure, and has the usual constriction or sinus at the end nearest to the heart; it can be detected with high powers in sunlight, through the body volution of pale, clear, thin shells."

The eyes of *Truncatella littorea* "are precisely those of *T. Montagui*, and a similar white pupil is a singular coincidence."

In conclusion, I may observe, that I regard the general form and organization of the animal and shell of *Truncatella* as so peculiar, that I have long considered it the type of a peculiar family, characterized by the form of the lips and feet, the mode of walking, the short, broad, diverging tentacles, the position of the eye and its peculiar form, and the truncation of the shell.

On the other hand, the general form of the animal, the manner and habitation of the genus *Assiminia* are so like those of some of the smaller species of *Littorina* (which Dr. Leach named *Sabanæa*), that if it was not for the peculiar position of the eye on its long pedicel, I should have been inclined to have considered it as a subdivision of that genus, with very short tentacles and elongated eye-peduncles. But Mr. Berkeley's observations have set that at rest, as well as the distinction between it and *Truncatella*; for he shows that *Assiminia* has lungs like *Cyclostoma*, or rather *Helicina*, while the *Littorinæ* and *Truncatellæ* have well-developed gills for respiration, like the greater part of the marine genera; but the gills of *Littorina* and *Truncatella* are very unlike one another, the gills of the former being broad, short, laminar, and of the latter, single, ovate, and pectinate.

P.S.—Messrs. H. and A. Adams, in the number of their work issued since this paper was read, are so impressed with the peculiarity of the combination of characters that the animal presents, viz. a pulmonary respiration, spiral operculum, and terminal eyes, that they have formed for the genus a suborder named *Prosophthalma*, and a particular family, *Assiminiadæ*: see Genera of Mollusca, 313.

February 26, 1856.

Dr. Gray, F.R.S., in the Chair.

The following papers were read:—

1. On some additional Species of Birds received in collections from Bogota.

By Philip Lutley Sclater, M.A., F.Z.S.

(Aves, Pl. CXVI.—CXIX.)

MM. Verreaux of Paris, knowing the interest I take in New Grenadian ornithology, have most kindly transmitted to me some specimens of birds from a collection lately received from Bogota, which did not appear to them to be included in my list, published in in this Society's 'Proceedings' for last year. I have also myself noticed a few others, which I had not previously remarked in collections from that locality. From these sources I am enabled to lay before the Society a list of twenty-two species, which, added to those given in my former catalogue, raise the total number of birds now ascertained as belonging to this peculiar fauna to 457.

1. Nyctale harrisi, Cassin, Pr. Ac. Sc. Phil. (1849) iv. p. 157, et Journ. Ac. Sc. Phil. N. S. ii. p. 53, pl. 5. *Ciccaba gisella*, Bp. Consp. p. 44. *Gisella harrisi*, Bp. Compt. Rend. 1855, Oct. 22nd. '*Nyctalitinus albipunctatus*, Kaup,' Gray, Cat. of Gen. of B., App. p. 135.

Dr. Hartlaub writes me word that the Bremen Museum has a Bogota specimen of this peculiar Owl, and the example in the Norwich Museum named by Dr. Kaup *Nyctalitinus albipunctatus* was received, I believe, from the same locality.

2. Synallaxis elegans, sp. nov.

S. pallide murino-brunnea, infra medialiter albescentior, ventre medio candido, crisso et lateribus dorso concoloribus: pileo toto, nisi fronte, alis extus et cauda rufis: loris albescentibus.

Long. tota 6·4, alæ 2·2, caudæ 3·7.

This *Synallaxis* is very like a common Brazilian species, *S. ruficapilla*, Vieill., which it resembles in having the head, wings and tail bright rufous. But in the present bird the rufous colour does not extend over the front, which is brown like the back, there are no yellowish supercilia, or at least the very faintest traces of them, and the under plumage is not cinereous, but brown like the upper, only paler, and medially passing into white, which colour is quite pure in the middle of the belly. The tail is longer, and the webs of the rectrices are not so broad as in the Brazilian bird.

This species, like other true *Synallaxes*, has only eight large rectrices and an outer pair abnormally small. Other birds, often placed in this genus, have twelve, which is the number given by

Vieillot in his generic characters, but I consider this erroneous, and believe the former number to be the normal one.

The present bird seems not uncommon in Bogota collections, but has probably been hitherto confounded with its several allied species.

3. SYNALLAXIS MŒSTA, sp. nov.

S. olivascenti-brunnea, subtus paulo dilutior : alis intus nigris, extus castaneis : cauda rufa : loris et gutture albidioribus : tectricibus subalaribus pallide fulvis ; rostro valido, nigro ; mandibula inferiore basi albescente : pedibus pallidis.

Long. tota 5·2, alæ 2·5, caudæ 2·5.

The single specimen which I possess of this bird was received from MM. Verreaux. It is of a nearly uniform olive-brown, rather lighter below, particularly on the throat and sides of the head. The chestnut margin of the quills grows narrower towards their apices, leaving the dusky black apparent, but at their bases extends through both webs and shows itself underneath. The tail is pure rufous and very short, but I am not quite certain that it is of its normal length in my specimen, there being indications of a state of moult. The bill is rather stronger and more conical than in most species of the genus.

Out of the six *Synallaxes* described by M. de Lafresnaye (Rev. Zool. 1843, p. 290) as from this country, I have as yet only met with three, namely, *S. gularis, cinnamomeus* and *unirufus*, which I have been able to identify with certainty. I have, however, specimens of a Bogota bird of this genus which I think may possibly be his *S. fuliginosus*, and there are examples of the same species in the British Museum. If I am correct in my conjectures, I may remark, that the description he gives of this bird is hardly sufficiently accurate, and I can only refer my specimens doubtfully to his species with the following characters :

4. SYNALLAXIS FULIGINOSA, Lafr. R. Z. 1843, p. 290 ?

S. supra rufescenti-brunnea, alis extus paulo clarioribus, cauda adhuc clariore, pure brunnescenti-rufa, scapis plumarum nigris : rectricibus decem, angustissimis et tenuissimis : loris et superciliis indistincte albidis : infra obscure cinerea, mento summo et ventre albescentioribus : rostro nigro : basi mandibulæ inferioris albicante ; pedibus validissimis clare brunneis.

Long. tota 6·5, alæ 2·3, caudæ 3·75.

The tail of this bird is of a clearer and more reddish-brown than the back, with the shafts of the feathers black. The outer pair of rectrices are abnormally small, measuring only one inch in length, the next pair about double that length. The webs of all are exceedingly narrow, in particular the outer ones, and grow finer towards the extremities.

This form of *Synallaxis* shows evident *rapprochement* towards *Sylviorthorhynchus*.

5. ANABATES RUFICAUDATUS, Lafr. et d'Orb. Syn. Av. in Mag. de Zool. 1838, p. 15.

I possess a Bogota skin, received from MM. Verreaux, which

M. de Lafresnaye has kindly identified for me as being of this species.

The apical portion of the outer primaries in this bird is black, which colour gradually diminishes in extent in the succeeding feathers, and is reduced to a minimum in the secondaries, where it only forms a blotch at the ends. The first quill is nearly wholly black, and in those next succeeding the same colour advances far up the stems, being broadly margined outwardly with chestnut, and inwardly with paler cinnamomeous.

6. Anabates erythropterus, sp. nov.?

A. supra pallide brunnescenti-cinereus; alis extus et cauda tota rufis, remigum exteriorum parte apicali nigra: loris oculorum ambitu et gula cum tectricibus subalaribus cinnamomeis: corpore cetero subtus pallide cinnamomescenti-albido, lateribus olivaceo tinctis: rostro albido, culmine nigrescenti-plumbeo: pedibus pallidis.

Long. tota 6·2, alæ 3·6, caudæ 3·1.

The only *Anabates* I know of likely to resemble the present species is *A. guianensis* (Pl. Enl. 686, fig. 2). I have never seen that bird, but if it has been correctly described, there is no doubt that this species is distinct.

7. Xenops rutilans, Temm. Pl. Col. 72, fig. 2.

A Bogota skin received from MM. Verreaux seems referable to this bird, though there is rather more black in the tail than in my Brazilian specimens.

8. Margarornis brunnescens, sp. nov. (Plate CXVI.)

M. umbrino-brunnea, capitis dorsique superi pennis obsolete et angustissime nigro marginulatis: infra pallide ochracescenti-albo guttulata, his guttulis nigro cinctis et deinde umbrino-brunneo terminatis: loris et gutture medio ochracescentibus, nigrescente paululum variegatis: rostro superiore nigro, inferiore flavido, pedibus clare brunneis.

Long. tota 5·5, alæ 2·5, caudæ 2·5.

MM. Verreaux have transmitted me a single specimen of this bird, which forms a second species of the genus *Margarornis*, instituted by Reichenbach for the *Anabates squamiger*, Lafr. & d'Orb. M. de Lafresnaye has also coined the name *Anabasitta* for the same form, but I believe the first-mentioned term has a slight priority. The type of the genus is very common in collections from Bogota. The present bird may be distinguished from it at once by the want of the bright chestnut colouring on the back and tail. In form, however, there is not much difference. In *M. brunnescens* the beak is rather longer, and the first two primaries proportionately rather shorter. The elongation of the naked stems of the rectrices is carried to a greater extent in the present species than in the other. There are twelve tail-feathers, and they all terminate in a similar hair-like point. The plumage of the two species below shows much similarity, but in the "*brunnescens*" the tear-like spots are yellowish.

I may remark that Reichenbach has kept the Bogota and Bolivian *Margarornithes* apart, but M. de Lafresnaye, who knows both species, considers them identical. It is with Bogota specimens I have been comparing the present bird.

ALECTRURINÆ ?

9. OCTHOËCA FUMICOLOR, sp. nov. (Plate CXVII.)

O. supra fumoso-brunnea, dorso imo rufescentiore: alis caudaque nigris: tectricibus alarum rufo bivittatis, et secondariis ultimis extus rufescente marginatis: superciliis latis et fronte ad nucham ochracescenti-albis: subtus brunnescenti-murina, ventre medio albescentiore, gula quasi dorso concolore, sed pallidiore: rostro et pedibus nigris.

Long. tota 6·0, alæ 3·5, caudæ 3·0.

This bird appears to be naturally placed in Dr. Cabanis' genus *Octhoeca*, of which the type is *Octhoeca œnanthoides* (*Fluvicola œnanthoides*, d'Orb. Voy. pl. 38, fig. 2).

Other species belonging to this same group are *Octhoeca leucophrys* (*Fluv. leucophrys*, d'Orb. Voy. pl. 38, fig. 1), which the present bird most resembles in colouring; *Octhoeca rufipectoralis* (*ibidem*, pl. 37, fig. 2); *Octhoeca Lessoni*, mihi (*Tyrannulus rufipectus*, Less. Descr. des Mamm. et Ois. p. 296); *Octhoeca albidiema* (*Setophaga albidiema*, Lafr. R. Z. 1848, p. 8), and, perhaps, *Setophaga cinnamomeiventris*, Lafr. R. Z. 1845, p. 80. The three species figured by d'Orbigny are from Bolivia; the three latter, like the present, from Bogota. They all offer considerable similarity in colours, and present, so far as I am acquainted with them, the same structure. M. de Lafresnaye has indicated the existence and affinities of this group in his article in the 'Revue Zoologique,' 1848, p. 8. All d'Orbigny's species inhabit his third zone of elevation, that is, above 11,000 feet above the sea-level, and it is probable, therefore, that the New Grenadian *Octhoecæ* are likewise from the higher regions of the Andes.

10. EUSCARTHMUS AGILIS, sp. nov. (Plate CXVIII.)

E. supra nigro et pallido brunneo mixtus, pennis plerumque nigris brunneo marginatis: crista capitis totius medialiter nigra, lateraliter autem et subtus pallide brunnea: alis nigris, tectricibus rufescente terminatis, secondariis extus pallescentibus: cauda unicolore nigra rectricum mediarum apicibus et omnium marginibus exterioribus pallescentibus: subtus pallide fulvo-flavidus; capitis lateribus et gutture toto albis nigro variegatis; pectore longitudinaliter nigro flammulato: rostro nigro, mandibulæ inferioris basi alba: pedibus nigerrimis: tectricibus subalaribus pallide fulvis.

Long. tota 4·6, alæ 2·2, caudæ 2·4.

This bird much resembles *Euscarthmus parulus* and *E. albicristatus*, in general appearance, and may, I think, be safely placed in the same genus, though the bill is slightly broader, and the tail is proportionately rather longer, and has the rectrices more graduated.

The only example I have seen of it was transmitted to me by MM. Verreaux.

In the markings of the lower part of the body it is not unlike *E. parulus*, but the ground-colour is more yellowish, and the striæ less distinct on the throat and more marked on the breast. Above these two species are easily distinguishable. The present has the back brown, mixed with black blotches, and not uniform cinereous-olive, and the crest is shorter and differently formed, the whole of the head-feathers being moderately lengthened, not a few of the centre feathers only, as in the older species.

PIPRINÆ.

11. PIPRA CORACINA, sp. nov.

Pipra leucocilla, Sclater, P. Z. S. 1855, p. 152.

Pipra coracina, J. et E. Verreaux, MS.

♂ *coracino-nigra: pileo nuchaque albis: rostro nigrescenti-plumbeo: pedibus nigris.* ♂ junr. *viridescenti-cinereus, pæne unicolor, alis caudaque intus nigris.*

Long. tota 3·5, alæ 2·8, caudæ 1·2.

MM. Verreaux have transmitted to me an adult and young male, and their MS. description of this species of Manakin, which they consider distinct from the well-known *Pipra leucocilla*, and I am inclined to think they are right. The black colour is generally more intense in the present bird, the white extends further back down the head, the wings are longer, and the bill rather shorter. They remark that the Peruvian bird (which I have not yet seen) appears to be the same as this species.

FORMICARIINÆ.

12. CONOPOPHAGA CUCULLATA, sp. nov. (Plate CXIX.)

C. supra brunnescenti-olivacea, alis caudaque nigricantibus brunnescente marginatis: capite toto et cervice postica cum gula et tectricum alarum marginibus clare rufo-castaneis: plaga pectorali alba: abdomine dilute cinereo, ventre medio et hypochondriis roseo aut rufescente tinctis: tectricibus subalaribus flavicanti-brunneis: rostro flavo: pedibus pallidis.

Long. tota 4·0, alæ 2·7, caudæ 1·1.

The single specimen sent to me by MM. Verreaux is the only example I have yet seen of this *Conopophaga*. It is not likely to be confounded with any other species of the genus that I am acquainted with, its bright chestnut head and throat and white pectoral patch rendering it eminently distinguishable.

ICTERINÆ.

13. STURNELLA LUDOVICIANA (Linn.).

A single bird transmitted by MM. Verreaux seems to belong to this species. The yellow belly is rather brighter than in U.S. examples, but at present I can discover no essential difference. It is singular, if this *is* the North-American species, that the Mexican bird (*Sturnella hippocrepis*, Wagl.) is usually considered distinct.

EMBERIZINÆ.

14. EMBERIZOIDES MACRURUS (Gm.). *Fringilla macroura*, Gm. S. N. i. 918. *Tardivola macroura*, Cab. M. H. p. 135 (note).

A Bogota specimen of this bird which I have lately acquired agrees with the true *E. macrurus* from Cayenne, and seems to be quite distinct from the Brazilian *E. marginalis* (Temminck), with which it is generally made synonymous.

TANAGRINÆ.

15. CHLOROSPINGUS XANTHOPHRYS, sp. nov.

C. brunnescenti-olivaceus: loris nigricantibus: superciliis curtis a fronte ad oculum summum et corpore mediali subtus flavis: rostro nigro: pedibus pallide brunneis.

Long. tota 4·7, alæ 2·5, caudæ 2·4.

Obs. Similis *C. superciliari*, sed minor, et superciliis brevioribus et flavis, capite non cinerascente, lateribusque olivascentibus dignoscendus.

I possess a single example of this bird, and have seen others.

16. CHLOROSPINGUS LICHTENSTEINI, sp. nov. *Nemosia verticalis*, Licht. in Mus. Berol. (partim).

C. supra cinereus, alis caudaque nigricantibus; pileo atro: vitta mediali verticis ochracescenti-albida: subtus albidus: lateribus cinerascentibus.

Obs. Similis *C. verticali*, sed major, gula ventre concolore, nec nigra.

There is a single example of this bird in the Berlin Museum, received from M. Boissoneau of Paris along with specimens of *C. verticalis*, and not distinguished from that species.

COLUMBÆ.

17. CHLORŒNAS BICOLOR (Vieill.). *Col. bicolor*, Vieill. N. D. d'H. N. xxvi. 345. *C. vinacea*, Temm. Pig. t. 41. Mus. Brit.

18. ZENAIDA RUFICAUDA, G. R. Gray, MS. Bp. Coup d'œil sur l'ordre des Pigeons, p. 42. Mus. Brit. et Paris.

19. ZENAIDA PENTHERIA, Bp. Coup d'œil, p. 42; et Consp. ii. p. 84. Mus. Brit.

20. CHAMÆPELIA AMAZILIA, Bp. Coup d'œil, p. 38, et Consp. ii. p. 84. Mus. Brit.

GALLINÆ.

21. CHAMÆPETES GOUDOTI (Less.). *Ortalida Goudoti*, Less.

Man. d'Orn. ii. 217; et Tr. d'Orn. i. p. 481. *Chamæpetes Goudoti*, Wagler, Isis, 1832, p. 1227.

GRALLÆ.

22. GALLINAGO NOBILIS, sp. nov.

G. supra nigro-cinereo et brunneo (sicut in plerisque hujus generis speciebus) variegata: pileo summo nigro, vitta mediali irregulariter cinnamomeo-brunnea: capitis lateribus et cervice postica pallide cinnamomeo-brunneis, minute nigro punctatis; his punctis intra rictum et oculum lineam formantibus: scapularibus nigris cinnamomeo vittatis, plaga subterminali nigra præditis et extus iterum late ochracescenti-albo marginatis: remigibus omnibus pure et pallide nigricanti-cinereis, secondariorum et alulæ spuriæ apicibus extus pallescentibus; tectricibus albido et cinereo variegatis: subtus, gutture albicante, pectore toto cinnamomescenti-brunneo, nigricante flammulato; ventre toto albo, hypochondriis et tectricibus subalaribus albo nigroque regulariter transvittatis; tectricibus subcaudalibus albis cinnamomeo tinctis et nigro obsolete transfasciatis: caudæ rectricibus sedecem; harum octo mediis nigris claro rufo late terminatis, hoc colore rufo iterum sub margine anguste nigro vittato; una utrinque proxima præcedentibus assimili, sed colore nigro ochracescente maculato et terminatione rufa non æque lata; tribus autem utrinque extimis ochracescentibus nigro irregulariter transvittatis: rostro longissimo, brunnescente, apice nigra, basi pallidiore: pedibus nigro-fuscis.

Long. tota 11·0, alæ 5·7, caudæ 2·2, rostri à rictu 3·7, tarsi 1·5.

There is an example of this fine large species of Snipe in the British Museum, from Mr. S. Stevens's Bogota collection, and MM. Verreaux have also lately transmitted a single specimen to me. It is of about the same size as Temminck's *Scolopax gigantea*, but that species appears to have the wings banded. In the present bird the quills are uniform slaty black. The spurious wings and secondaries are edged with buffy white, and all the wing-coverts are terminated with the same colour, forming irregular barrings.

23. RALLUS SEMIPLUMBEUS, sp. nov. ?

R. supra brunnescenti-olivaceus, nigro flammulatus; alis caudaque nigricanti-brunneis; alarum tectricibus rufis: loris nigris: capitis lateribus et corpore toto subtus plumbeis; mento et gulari stria albis: tectricibus subcaudalibus albis nigro mixtis: rostri culmine et apice nigris; mandibula autem inferiore ruberrima: pedibus pallide brunneis.

Long. tota 8·5, alæ 4·4, caudæ 1·8, rostri 1·7.

This is a true *Rallus*—near *R. virginianus* of the U.S.—of which MM. Verreaux have sent me a single specimen. I have tried in vain to make it agree with any recognized species, and therefore provided it with a (temporary ?) name.

2. DESCRIPTIONS OF TWENTY-FIVE NEW SPECIES OF LAND-SHELLS, FROM THE COLLECTION OF H. CUMING, ESQ.

BY DR. L. PFEIFFER.

1. HELIX EXSERTA, Pfr. *H. testa vix perforata, conoideo-lenticulari, tenui, oblique rugosula, pallide cornea; spira conoidea, acutiuscula; anfr.* 4½ *regulariter accrescentibus, superne tumidulis, ad suturam carina rotundata, exserta marginatis, ultimo non descendente, basi convexo; apertura obliqua, depresse angulato-lunari; perist. simplice, recto, marginibus remotis, columellari brevi, subverticali.*

Diam. maj. 6, min. 5, alt. 3 mill.
Hab. Sandwich Islands (*Dr. Newcomb*).

2. HELIX COAGULATA, Pfr. *H. testa anguste perforata, conoideo-depressa, tenuiuscula, arcuatim striatula et ad peripheriam oblique malleato-rugosa, alabastrina, fascia* 1 *pellucida prope suturam ornata; spira brevi, conoideo-convexa; anfr.* 5 *vix convexiusculis, ultimo obsolete angulato, basi convexo, nitido; apertura obliqua, rotundato-lunari, vix latiore quam alta; perist. simplice, recto, margine dextro declivi, columellari superne vix reflexo.*

Diam. maj. 30, min. 25½, alt. 18 mill.
Hab. Amboina.

3. HELIX HAINESI, Pfr. *H. testa aperte perforata, depressa, tenui, sublævigata, diaphana, parum nitente, pallide cornea; spira brevissime conoidea, obtusa; sutura levi, submarginata; anfr.* 7 *vix convexiusculis, sensim accrescentibus, ultimo peripheria subangulato, basi convexiore, nitido; apertura vix obliqua, depresse lunari; perist. simplice, recto, marginibus vix convergentibus, columellari declivi, vix incrassato.*

Diam. maj. 29. min. 25, alt. 12 mill.
Hab. Siam.

4. HELIX SIAMENSIS, Pfr. *H. testa perforata, depressiuscula, solida, superne arcuato-striata, striis spiralibus granulato-decussata, pallide cornea; spira brevissime conoidea; anfr.* 6 *lente accrescentibus, vix convexiusculis, ultimo latiore, infra peripheriam leviter radiato-striato, nitido, albido; apertura obliqua, lunari; perist. simplice, recto, marginibus vix convergentibus, columellari superne brevissime reflexo.*

Diam. maj. 25, min. 22, alt. 12½ mill.
Hab. Siam.

5. HELIX OMISSA, Pfr. *H. testa umbilicata, depresso-turbinata, tenui, ruguloso-striata, diaphana, cerea; spira breviter turbinata, apice acutiuscula; anf.* 4 *convexis, ultimo non descendente, supra peripheriam subangulato, basi convexo; umbilico* ¼ *diametri fere æquante; apertura diagonali, lunato-rotundata; perist. simplice, recto, marginibus approximatis, columellari subpatulo.*

Diam. maj. 4, min. 3½, alt. 2 mill.
Hab. Juan Fernandez (*H. Cuming*).

6. **Helix Miguelina**, Pfr. *H. testa angustissime umbilicata, depressa, tenui, striatula, pellucida, nitidissima, cornea, strigis distantibus fulvis radiata; spira parum elevata, convexa; anfr.* 5½ *vix convexiusculis, ultimo latiore, non descendente, depresso-rotundato; apertura magna, fere diagonali, lunato-rotundata; perist. simplice, recto, marginibus conniventibus, columellari arcuato, superne vix patente.*
Diam. maj. 11, min. 9½, alt. 5 mill.
Hab. San Miguel, Azores.

7. **Helix volutella**, Pfr. *H. testa umbilicata, subdiscoidea, tenui, striatula, pallide cornea, lineis rufis subconfertis radiata: spira plana; anfr.* 5 *vix convexiusculis, lente accrescentibus, ultimo non descendente, peripheria rotundato; umbilico aperto,* ⅕ *diametri subæquante; apertura parum obliqua, lunari; perist. simplice, recto, marginibus remotis, basali substricto, columellari vix patente.*
Diam. maj. 7, min. 6, alt. 2⅔ mill.
Hab. San Miguel, Azores.

8. **Helix alata**, Pfr. *H. testa anguste umbilicata, depressa, membranacea, oblique irregulariter striata, oleoso-micante, pellucida, fusco-cornea; spira subplana; anfr.* 3½ *celeriter accrescentibus, ultimo angulato, carina alæformi tenui decidua cincto, antice dilatato; basi convexo; apertura perobliqua, securiformi; perist. simplice, recto, margine basali perarcuato.*
Diam. maj. 8½, min. 6, alt. 3 mill.
Hab. Sandwich Islands (*Dr. Newcomb*).

9. **Helix angelica**, Pfr. *H. testa subaperte perforata, depressa, tenui, superne subconferte striata, pellucida, nitida, virenti-cornea, varicibus castaneis, flavo-marginatis, irregulariter notata; spira parum elevata, vertice prominulo; sutura anguste albido-marginata; anfr.* 7 *sensim accrescentibus, convexiusculis, ultimo latiore, peripheria rotundato, basi læviore; apertura fere diagonali, lunari; perist. simplice, recto, castaneo-limbato, intus callo crassiusculo albo labiato.*
Diam. maj. 31, min. 27, alt. 13½ mill.
Hab. Thibet and Punjaub, India (*Conway Shiplay, Esq.*).

10. **Helix binaria**, Pfr. *H. testa umbilicata, lenticulari, arcuatim obtuse costata et striis spiralibus obsolete decussata, cornea, fusco maculose strigata; spira convexa, obtusula; sutura marginata; anfr.* 5½ *convexiusculis, lente accrescentibus, ultimo non descendente, subacute carinato; umbilico pervio,* ¼ *diametri subæquante; apertura diagonali, rhombea, lamellis* 2 *acutis albis parietalibus, intrantibus, denticuloque obsoleto columellari coarctata; perist. simplice, recto.*
Diam. maj. 4½, min. 4, alt. 2 mill.
Hab. Sandwich Islands (*Dr. Newcomb*).

11. **Helix fanulus**, Pfr. *H. testa umbilicata, turbiniformi, tenui, superne confertim oblique plicata, diaphana, cerea; spira*

convexo-conica, acutiuscula; anfr. 4½ *convexiusculis, ultimo non descendente, subacute carinato, basi radiato-striato, circa umbilicum angustum excavato; apertura obliqua, subsecuriformi; perist. simplice, recto, margine basali breviter reflexo.*

Diam. maj. 3⅓, min. 3, alt. 2½ mill.

Hab. Port Natal.

12. Helix undina, Pfr. *H. testa imperforata, globoso-turbinata, tenui, lævigata, nitida, albido-hyalina; spira convexo-conoidea; anfr.* 5 *convexiusculis, ultimo spira breviore, antice vix deflexo, peripheria obsolete angulato, basi planiusculo; apertura perobliqua, truncato-elliptica; perist. tenui, marginibus subconniventibus, dextro expanso, columellari leviter arcuato, planato, appresso.*

Diam. maj. 23, min. 19, alt. 14½ mill.

Hab. ——?

13. Bulimus Darnaudi, Pfr. *B. testa compresse subumbilicata, conico-ovata, tenui, subdistanter costata, striis spiralibus sub lente obsolete decussata, virenti-fulva; spira conica, vertice obtuso; anf.* 5½–6 *convexiusculis, ultimo spiram paulo superante, basi subcompresso; columella substricta, leviter procedente; apertura vix obliqua, elliptico-ovali, basi subangulata; perist. breviter expanso, tenuiter albo-labiato, margine columellari dilatato, subplano, patente.*

Long. 23, diam. 12 mill.

Hab. Sennaar, interior of Africa (*Mr. Darnaud*).

14. Bulimus Cordovanus, Pfr. *B. testa subrimata, fusiformiturrita, solidula, confertim arcuato-costulata (costulis subdecussatis, breviter pilosis), pallide fusco-cornea; spira elongata, apice obtusa; anfr.* 10, *superis convexis, sequentibus sensim planioribus, ultimo antice soluto, descendente, dorso acute carinato, basi cristato et scrobiculato; apertura integra, ovali, quinquedentata; dentibus* 2 *lamellæformibus in parte sinistra,* 3 *inæqualibus in dextra; perist. continuo, expanso, albido.*

Long. 23, diam. 5 mill.

Hab. Andes near Cordova.

15. Bulimus cyathostomus, Pfr. *B. testa oblique rimata, fusiformi-cylindrica, solida, longitudinaliter confertim striata, albida; spira cylindraceo-turrita, apice acuta; sutura submarginata; anfr.* 7½ *planiusculis, ultimo* ⅓ *longitudinis vix attingente, latere dextro profunde bisulcato, basi subcristato; apertura verticali, cyathiformi, ringente; columella profunde bidentata; perist. continuo, expanso, ad parietem aperturalem appresso et juxta marginem dextrum laminam validam, securiformem immittente, margine dextro superne sinuato, profunde et inæqualiter trilamellato.*

Long. 20½, diam. 7 mill.

Hab. Old Calabar, West Africa.

16. Achatina Shuttleworthi, Pfr. *A. testa ovato-conica, tenuissima, submembranacea, confertissime chordato-plicata, sericea, cornea, maculis rufis ad suturam et ad peripheriam tæniata, cæterum pallide rufo strigata; spira conica, obtusa; anfr.* 5½ *convex-*

iusculis, ultimo spira paulo longiore; columella substriata, compressa, basi oblique truncata; apertura obliqua, truncato-ovali; perist. simplice, tenui.

Long. 34, diam. 17 mill.

Hab. Grand Bassam, Africa.

17. Achatina corrosula, Pfr. *A. testa turrita, solidula, sublævigata, punctatim corrosula, pallide cornea; spira convexiusculo-turrita, apice acutiuscula; sutura levi, subcrenulata; anfr. 9 vix convexiusculis, ultimo $\frac{2}{7}$ longitudinis vix æquante, basi rotundato; columella perarcuata, oblique distincte truncata; apertura parum obliqua, sinuato-semiovali; perist. simplice, tenui.*

Long. 15, diam. 6$\frac{1}{3}$ mill.

Hab. Neilgherries (*Conway Shiplay, Esq.*).

18. Achatina pallens, Pfr. *A. testa turrita, tenuiuscula, sublævigata (sub lente minutissime decussatim striatula), semidiaphana, pallide corneo-cerea; spira regulariter attenuata, apice acutiuscula; sutura levi, anguste marginata; anfr. 9 vix convexis, ultimo $\frac{2}{7}$ longitudinis subæquante, basi subattenuato; columella parum arcuata, abrupte truncata; apertura parum obliqua, sinuato-ovali; perist. simplice.*

Long. 16, diam. 4$\frac{2}{3}$ mill.

Hab. Moëly, East Africa.

19. Pupa bacillus, Pfr. *P. testa profunde arcuato-rimata, subcylindrica, solida, peroblique costata, alabastrino-alba; spira sensim in conum obtusulum attenuata; sutura mediocri, costis excurrentibus coronata; anfr. 9 convexiusculis, ultimo antice alte ascendente, basi subcompresso; apertura verticali, truncato-oblonga, dente intrante parietali prope angulum coarctata; perist. breviter expanso, margine dextro intus crasse labiato, columellari simplice, patente.*

Long. 13, diam. vix 5 mill.

Hab. Mauritius.

20. Pupa teres, Pfr. *P. testa breviter rimata, cylindracea, tenuiuscula, oblique plicata, diaphana, corneo-albida; spira cylindrica, in conum brevem, obtusum terminata; sutura impressa; anfr. 8 vix convexis, ultimo non ascendente, basi obsolete gibbo; apertura verticali, ovali; perist. tenui, expansiusculo, marginibus callo, dentem breviter intrantem emittente, junctis.*

Long. 10, diam. 3$\frac{1}{2}$ mill.

Hab. Mauritius.

21. Pupa Sennaariensis, Pfr. *P. testa perforata, oblongo-turrita, tenui, levissime striatula, parum nitente, fusco-cornea; spira subregulariter attenuata, apice obtusa; anfr. 7 convexis, ultimo $\frac{1}{3}$ longitudinis subæquante, circa perforationem imperviam compresso; apertura vix obliqua, truncato-oblonga, lamella unica parietali intrante, fere ad angulum marginis dextri posita, coarctata; perist. tenui vix patulo, intus sublabiato.*

Long. 4, diam. 1$\frac{1}{2}$ mill.

Hab. Sennaar, interior of Africa (*Mr. Darnaud*).

22. **TOMIGERUS VENEZUELENSIS**, Pfr. *T. testa subflexuose rimata, compresse conica, tenui, striatula, pellucida, oleoso-micante, pallide cornea; spira conoidea, obtusa; sutura rufo-marginata; anfr.* 4 *convexis, ultimo inflato, latere aperturæ vix planiore, antice vix ascendente, profunde scrobiculato et arcuato-cristato; apertura vix obliqua, subtrapeziformi, septemplicata; lamellis* 3 *in pariete aperturali (angulari maxima, intrante, mediana profunda, minima),* 3 *subæqualibus in parte basali,* 1 *valida, angulatim intrante in margine dextro; perist. tenue, acutum, expansum, intus albido-labiatum, margine supero brevi, cum dextro angulum obtusum formante, basali stricto, declivi, longissimo.*
Diam. maj. $6\frac{1}{3}$, min. $4\frac{1}{3}$, alt. 5 mill.
Hab. Venezuela.

23. **CLAUSILIA SENNAARIENSIS**, Pfr. *Cl. testa subrimata, fusiformi, tenera, dense capillaceo-costulata, oleoso-micante, pellucida, cornea; spira gracili, apice obtuse conica; sutura simplice; anfr.* 8 *vix convexiusculis, ultimo basi obtuse bicristato; apertura subobliqua, oblonga; lamellis convergentibus, infera valida, subramosa; lunella imperfecta, punctiformi vel rarius lineari; plica palatali* 1 *supera, subcolumellari inconspicua; perist. continuo, breviter soluto, expanso, albido, margine externo intus subincrassato.*
Long. 10, diam. $2\frac{2}{3}$ mill.
Hab. Sennaar, interior of Africa.

24. **MEGALOMASTOMA COMPLANATUM**, Pfr. *M. testa subobtecte umbilicata, pupæformi, solida, oblique levissime striatula, sordide violacea, absque epidermide; spira subcylindrica, apice attenuata, breviter truncata; sutura impressa, pallida; anf. superst.* 6, *superis convexis, penultimo vix convexiusculo, ultimo angustiore, latere aperturæ subplanato, antice pallido, circa umbilicum crista pallida, circumscripta munito; apertura verticali, circulari, in fundo castanea; perist. albo, perincrassato, superne breviter adnato, margine dextro expanso et reflexo, sinistro dilatato, patente, superne subauriculato. Operc.?*
Long. $32\frac{1}{2}$, diam. 14 mill.
Hab. Cuba.

25. **RHAPHAULUS LORRAINI**, Pfr. *Rh. testa perforata, gibboso-oblonga, solida, conferte striata, sub epidermide fulvida saturate violacea; spira irregulari, inflata, in conum brevem desinens; anfr.* $5\frac{1}{2}$ *convexis, penultimo gibbo, latere aperturæ subplanato, ultimo attenuato, antice subascendente; apertura circulari, basi axin subexcedente; perist. calloso, albo, continuo, expanso et reflexiusculo, limbo interno cum exteriore connato; foramine supero parvulo, oblique sursum spectante. Operc.?*
Long. 15, diam. 8 mill.
Hab. Pulo Penang (*Dr. Lorrain*).

March 11, 1856.

Dr. Gray, F.R.S., in the Chair.

The following papers were read:—

1. NOTE ON PSALTRIA FLAVICEPS, A THIRD AMERICAN SPECIES OF THE PARINE GENUS PSALTRIA.

BY PHILIP LUTLEY SCLATER, M.A., F.Z.S.

In describing a new *Conirostrum* in these 'Proceedings' for last year (P.Z.S. 1855, p. 74), and giving a list of all the species of that form with which I was acquainted, I took the opportunity of noticing some birds which had been referred to the same genus, which I had not then met with. Among these latter was the *Conirostrum ornatum* of Lawrence, described and figured in the Annals of the Lyceum of Nat. Hist. of New York for 1851. It is only lately that I have been successful in meeting with a specimen of this, I believe, rather rare species. As I had always supposed, I find it has nothing to do with the genus *Conirostrum*, but has been much more nearly rightly placed by Sundevall, who described it as *Ægithalus flaviceps* the year before Mr. Lawrence's name appeared. In my opinion, however, this latter position is not perfectly satisfactory for it. This little bird in fact seems to me to form a very natural member of the Parine genus *Psaltria*, of which some Asiatic species, including the type, are figured in the seventh Number of Mr. Gould's great work on the Birds of that continent.

Mr. Cassin, in a very useful Synopsis of the North-American *Parinæ*, given in his excellent volume on the Birds of California, Oregon, &c., p. 20, mentions two North-American species of this genus, *Psaltria minima* and *P. melanotis*, but says nothing of the present bird, with which he seems to have been unacquainted. Examples of both the former species are contained in the British Museum, and upon comparison agree in every essential character with this bird. It is true that its yellow face and chestnut bend of the wing are quite different in cast of colouring from what we meet with in the other species of this group, and I have little doubt that some naturalists who are fond of coining new names would consider this fact a sufficient excuse for making it the type of a new division. But I do myself think that generic characters ought only to be founded upon differences in structure; and as in the present instance there appears to be none such, I think we shall be quite accurate in registering the present bird as a third American species of the Asiatico-American genus *Psaltria* under the title of

PSALTRIA FLAVICEPS.

Ægithalus flaviceps, Sund. Öfvers. af Vet. Ac. Förhand. vii. p. 129 note (1850).

Conirostrum ornatum, Lawrence, Ann. Lyc. New York, 1851, p. 113, pl. 5. fig. 1.

P. fuscescenti-cinereus, subtus dilutior: pileo et gutture flavescentibus: campteriis clare castaneis: alis caudaque intus nigricanti-brunneis: rostro et pedibus nigris: tectricibus subalaribus albis.

Long. tota 4·2, alæ 2·1, caudæ 1·9.

Hab. Texas (*Lawrence*).

Note.—Since writing the above, I have been enabled through Mr. Gould's kindness to compare *Psaltria flaviceps* with the type of the genus, *Psaltria exilis*, from Java. It certainly offers a more pointed beak and wing not so rounded as the latter bird, and may be considered as rather aberrant in form. Any naturalist, therefore, who is unwilling to class it with true *Psaltria* may use for it the generic term *Psaltriparus*, that name having been bestowed by Prince Bonaparte (Compt. Rend. Ac. Sc. Par. xxxi. p. 478) on *Psaltria melanotis* (Sandbach), with which species this bird agrees in every respect.

2. On a peculiar Variety of Mus Musculus.

By John S. Gaskoin, F.L.S.

(Mammalia, Pl. XLI.)

Mus Musculus. Var. *Mus nudo-plicatus.*

I have thus designated this strange and novel form of the genus *Mus*, to give the more importance to the singularity.

In the spring of 1854 a labourer in the employ of Mr. Webster, a tenant on the Taplow-court estate, observed several little white creatures running about a straw-rick in the wood at the back of the lodge near Taplow paper-mills, Maidenhead Bridge, and succeeded in securing two of them;—the following day, on moving some of the straw in search of more, he disturbed two others, which he also captured; and disposed of the four to Bond, the Maidenhead Bridge boatman, for five shillings. Two died during the first night, probably from the rough usage they received when taken; there remained, to use Bond's expression, but "the old buck and a doe big with kit." In seven days she brought forth five young ones; and the next day removed from the nest two that were dead; the remainder were reared. One of the existing five was afterwards lost or killed. These little animals were readily recognized as a form of mouse, but of so extraordinary a conformation in their external structure as to attract the curiosity of the immediate neighbourhood, and obtained the not inappropriate name of the rhinoceros mice. The surmise of the people on the spot is, that they had escaped from one of the numerous barges which are constantly arriving at the paper-mills laden with rags, &c., principally of foreign importation. Bond having possessed them four months, offered them for sale to the Zoological Society of London, and the purchase being declined, I bought them, lest so singular a form in natural history should be lost to science and pass into oblivion; and it is to prevent this, that I now beg to record their characters in the 'Proceedings' of this Society, They were shown at the meetings of this and the Linnean Societies. and to many other naturalists; and finally, were exhibited during four months in the small-quadruped house in the gardens of the Society, with the view of eliciting information respecting them, as to any similar conformation in the species or genus having before been observed; and expressions of surprise at their novelty of form were in every instance the only remarks obtained. At the period named of their exhibition all had died (three of them are now shown in spirit). Unfortunately they did not breed, although three of them were born, in captivity.

In size these animals somewhat exceeded the common mouse, measuring from the tip of the nose to the base of the tail $4\frac{2}{10}$ths inches; they were totally destitute of hairs, excepting some two or three dark-coloured labial hairs, or whiskers; the external integument pinkish white, and formed into coarse prominent plicæ, or duplicatures of itself, transversely traversing the body in an undulated shape, and increasing in width and projection as they descended from the dorsum to the most depending line on either side of the thorax and abdomen, and there forming pendulous flaps, extending from the arm of the fore to the thighs of the hind legs; so that all the legs being stretched asunder, as when on the wires of the cage, these flaps became expanded in the manner of the flying squirrel. The plicæ or duplications of the skin were on the sides of the body in a degree symmetrical; and on the face and head, particularly so, as will be observed in the plate, which represents the old male animal, very faithfully delineated by Wolf, to elucidate this paper; the ears of a dark or blackish colour, the tail ash-coloured, and the eyes black, indicating they were not albinos of the species. It was curious to observe the quickness and dexterity with which their little paws opened along the furrows formed by the plicæ or folds, to clean between them. So dissimilar, it will be observed, from the characters given, is the external formation of these animals from that of the domestic mouse, that opinions were risked as to their constituting a different species, but on investigating the teeth of the first one that died, and they proving identical, it was inferred they are a *lusus naturæ* of that species;—if such, however, be the fact, I believe this will prove the first instance on record in which the whole litter or brood of animals or birds, have all been in exactly the same state of abnormal condition, and that condition becoming permanent, and continued through successive generations; of which we have here the example of two or more generations, and have no knowledge whatever of when this abnormal state may have begun;—for, as in this exemplification, "like begets like"—"*similia similibus gignuntur*," it is fair to conclude that the two parents whose progeny resembled them, had also progenitors similar to themselves; especially as they in their breeding, like genuine species in the wild state, associated only with those of their own kind; thus, if the race be not extinct, successions with the same peculiarities will be produced, and give rise to a remarkable example of the origin of a new species, or variety of a species, in the genus. I have made inquiries about the locality where these animals were found, as to whether others had ever been observed there before they were discovered, or have been met with since, and find these to have been the only known instances of their occurrence.

I am not aware that in the nests of the Rook, *Corvus frugilegus*, or the Black-bird, *Merula vulgaris* (which I mention as being those in whose productions *lusus naturæ* are the most frequently noticed), or in the nests of any other bird, more than one individual of a brood has been found, constituted in the healthy condition, and having the plumage white, and the red eye of the true albino; but variations in colour, &c., may occur in any number, as the results of physical impediments, and not natural production; however, with increase of strength and health, these generally obtain afterwards their proper-coloured plumage, and are not therefore true *lusus naturæ*. To quadrupeds I believe the rule equally applies.

In consequence of the interesting conversation which followed the reading of the foregoing paper, I think it proper to subjoin a few other observations.

The excellent condition and clean appearance of the animals, and their well feeding, and activity, left no doubt as to their healthy state during the six months they were alive in my possession and during the four months they were in that of Bond. A member present stated, that while they were in the gardens he had microscopically examined the lamellæ or branny scales which are ever separating, in larger or smaller particles, from the epidermis of animals, and found them the natural and healthy production. My own examination of these exfoliations had led me to the same opinion. I had the opportunity, and carried my inquiry still further; I carefully examined the surface and sections of the dermoid covering with low and with high microscopic powers, and with transmitted light, and as opake objects, with a view to discover any hair follicles or glandular bulbs from which hairs might have emanated, but could not discover a single indication of either, nor any recognizable vestige of their obliteration;—I therefore believe the organs for pilous production were absent, and *ab initio*. These little animals having been found in a straw-rick, I conclude, will sufficiently indicate their habits and general residence to be similar to those of the common mouse.

Note.—Having recently heard that a specimen of the same variety of *Mus* that I have described is preserved in the Museum of the College of Surgeons, I compared it with the examples I possess, and found it precisely the same in every character; it was caught by the late Mr. Clift in the fire-place of a room in his house in London, and is entered in the Catalogue of Monsters—"No. 121. A common Mouse (*Mus Musculus*), full-grown, which, from its birth, had not the slightest appearance of hair on its skin, being perfectly naked. Presented by Mr. Clift, 1820."

3. DESCRIPTION OF THE ANIMALS AND TEETH OF TYLODINA AND OTHER GENERA OF GASTEROPODOUS MOLLUSCA.

BY DR. JOHN EDWARD GRAY, F.R.S., V.P.Z.S., P.B.S. ETC.

In the following paper I forward the description of the animal and the teeth of several genera of Mollusca which have not yet been recorded. It is interesting to find that the examination of the teeth justifies the position which was theoretically assumed for the genera in the different families before their teeth were known.

A. PROBOSCIDIFERA HAMIGLOSSA.

Fam. MURICIDÆ.

FUSUS PALLIDUS ("*F. turbinelloides*=*Pyrula lignaria*, Reeve").

The proboscis elongate, cylindrical, subclavate, entirely retractile; the lingual membrane elongate, narrow, yellow; teeth in three longitudinal series, 1·1·1, the central transparent, provided with a rounded front edge, armed with three rather elongate, conical, subequal denticles; the lateral teeth yellow, versatile, straight, with two compressed arched processes, the terminal one largest, the basal rather smaller, and with a small tooth on its outer edge. The operculum is horny, thick, ovate, subtrigonal, annular, as large as the mouth of the shell; the apex blunt, rather worn; the nucleus apical, scar large oblong, with a thick callous exterior margin.

TYPHIS TETRAPTERUS.

Operculum horny, ovate, blunt, laminar; nucleus anterior apical, as large as the mouth of the shell, rather broader behind.

PISANIA ELEGANS. Panama.

The animal pale brown (in spirits); the foot folded up and across behind, and together longitudinally in front, leaving a ⊥-shaped groove; tentacles very small; proboscis elongate, thick, clavate, entirely retractile; lingual membrane elongate, thin; teeth in three longitudinal rows, 1·1·1, central far apart from each other, and the lateral teeth, lunate, with a slightly denticulated, nearly straight, front edge, and a rather strong concave tooth at each end; lateral teeth versatile, large, with a nearly equal basal and apical, conical, curved process. Male organ slender, elongate, tapering, yellow, compressed. Operculum ovate, acute, thick, horny, annular, nucleus apical.

TRIUMPHIS DISTORTA. Panama.

Lingual membrane elongate; teeth in three longitudinal series, 1·1·1; central teeth very small, far apart; lateral large, versatile, with two basal unequal, and one larger terminal curved process. Operculum ovate, acute, very thick.

Cyclope (Nassa) neritinea.

Nucleus prominent above the surface of the apex of the semi-adult shell, turrited, spiral, dextral, of three or four transversely sulcated flat whorls, with a blunt tip, at length deciduous, leaving a flat, spiral, rather callous scar. The whorls of the shell of the hatched animal suddenly enlarged, thick; smooth,spotted, forming a sudden contrast to the whorls of the nucleus.

Risso formed a genus, name *Nanina*, from the young state of the shell.

Fam. Buccinidæ.

Cuma sulcata.

Operculum horny, ovate, triangular, with a deep notch on the middle of the broad side, with a broad callous margin on the inner angular edge of the inner surface. Body and foot with a deep groove on the inner side, formed by the fold on the inner lip of the shell, like the notch in the operculum; foot folded up behind and together in front, forming a ⊥-shaped groove, with a cross groove in front; tentacles close together at the base, diverging, short, compressed, sharp-edged, eyes on the outer side near the tips, which are more slender and acute above them; proboscis moderately elongate, cylindrical, subclavate, completely retractile; lingual membrane very narrow and elongate, horny; teeth dark-coloured when adult, in three longitudinal series, 1 · 1 · 1; the central teeth broad, transverse, about half the width of the lingual membrane, with seven distant conical denticulations on the front edge, the central denticle forming a continued central ridge, the lateral denticulations unequal, the central of the three larger, the outer one on the outer margin of the tooth; the lateral teeth small, conical, curved, acute, versatile with a simple rather elongate base.

B. Odontoglossa.

Fam. Fasciolariadæ.

Fasciolaria salmo.

Operculum ovate, acute, smooth, slightly concentrically wrinkled; apex of this individual reproduced and rather rounded. Animal bright red; foot, when contracted, folded together transversely behind and longitudinally in front; tentacles small, compressed, subulate, united together at the base, forming a small veil; eyes on the outer side, rather above the base, with a conical tentacle only slightly produced above the eyes; proboscis very long, slender, entirely retractile; lingual membrane very long, slender, with three longitudinal series of teeth in cross lines, 1 · 1 · 1, the central teeth narrow, square, with three small, subequal, acute denticulations, the central one rather the longest; the lateral teeth very broad, slightly arched, and more arched at the outer end, with a series of twenty-five or thirty equal, regular, elongate, subulate teeth, somewhat like the teeth of a coarse hair-comb; the central teeth are opposite the space between the lateral teeth, that is, alternating with them. Male organ elongate, subcylindrical, compressed, of the same diameter the whole length, rounded at the end with a slight groove on its outer edges, which is not continued up the body as in *Malea*.

LEUCOZONIA ANGULATA.

Animal red; the foot, when contracted, folded up across behind, and longitudinally in front, leaving a ⊥-shaped groove; tentacles close together at their base, diverging, flat, with the eyes on the outer side rather below the tip, which is narrower and acute; proboscis completely retractile, clavate; lingual membrane elongate, rather narrow; teeth in three longitudinal series, the central series rather narrower than the lateral ones, square, with a rather arched anterior edge, with elongate, conical, acute denticulations, the central denticulation being the largest and longest; the lateral teeth bandlike, rather oblique, front edge with several distinct, conical, acute denticulations, the one at the edge of the inner margins near the central tooth being much the largest and longest; operculum ovate, acute, thick; nucleus apical.

C. TÆNIOGLOSSA.

Fam. DOLIIDÆ.

The proboscis of this family is very long, large, and more or less dilated, with an open rather trumpet-like mouth at the end.

MALEA RINGENS.

Animal like *Dolium*. Lingual membrane narrow, elongate, wider in front; teeth in seven longitudinal series, dark red, in each cross series, 3·1·3; the central teeth broad, lunate, thin, with a central recurved apex, and sometimes a small denticle for each side, halfway between the tooth and the end; the lateral teeth subulate, curved, acute at the top; cervical collar of two ovate, horny plates, covered with crowded converging subulate teeth; foot short, truncated in front, rounded behind; proboscis cylindrical, large, retractile into a sheath under the tentacular veil; mouth open at the end; tentacles subulate; eyes on short tubercles at the outer hinder side. Male organ very large, compressed, with marginal groove on the outer side, continued up the right side of the body by the side of the rectum, and with a slender filiform appendage near the tip. Operculum none.

Fam. TRITONIADÆ.

The animals of this family are intermediate in character between the *Proboscidiferæ* and the *Rostriferæ*. The proboscis is larger and thicker than in the other families of the *Proboscidiferæ*, is not so much retracted, and is contained in a more free sheath, and the end of the retracted trunk is often partly exposed beyond the margin of the sheath, giving the animal somewhat the external appearance of the *Rostriferæ*, and explaining why some of the French figures of the animals of *Triton*, *Ranella*, &c. are represented as if they belonged to that division of the Gasteropods.

RANELLA CÆLATA.

Tentacles lateral, separated by a short, rather broad, truncated tubular veil; eyes on the outer side rather above the base; proboscis short, very large and thick, retracted to the edge of the veil, leaving the two rounded pale processes of its apex exposed, forming with the veil a rostrum-like projection, very unlike the elongate, slender, cylindrical retracted proboscis of *Murex*, *Purpura*, &c.; lingual membrane narrow, elongate; teeth in seven series, 3·1·3, close together, rather crowded, the central rather narrow, with a central prominent denticle, having a smaller one on each side of the base; the lateral teeth subulate, curved.

SCUTIBRANCHIATA RHIPIDOGLOSSA.

Fam. TURBINIDÆ.

IMPERATOR, n. s.? Panama.

Eye-pedicel thick; tentacles elongate, slender, frontal lappets truncated, broad at the base, about $\frac{1}{3}$ the width of the forehead; foot folded longitudinally behind and transversely in front; lateral fringe of the right side most distinct; muzzle produced, annulated; lingual membrane elongate, rather narrow, linear, dark brown; central teeth 5·1·5, the middle one broad, the side ones narrower, square, all with a recurved tip; the lateral teeth numerous, hairlike, the inner one wider.

CALLOPOMA SAXOSUM. Panama.

Foot folded across in the middle; back with a hoodlike process covering the front part of the operculum, and depositing the external callosity of it; eyes on short thick pedicels; tentacles linear, at the upper edge of the eye-pedicel; frontal lappet truncated, narrow at the base, at the inner side of the base of the tentacles; lateral fringe on each side, with three beards on the middle of the edge; lingual membrane broad, elongate; central series 5·1·5; the central broad, with a recurved tip, the lateral one more narrow, equal; the lateral teeth numerous, hairlike.

Fam. TROCHIDÆ.

TEGULA PELLIS SERPENTIS. Panama.

Operculum horny, thin, orbicular, of many narrow, gradually enlarging whorls; foot folded together longitudinally when contracted; eyes on thin elongated pedicels; tentacles linear, sheathed at the base by the inner part of the base of the eye-pedicels; frontal lappet none; lateral fringe of left side distinct, with three beards just beneath it; lingual membrane elongate, broad; teeth in ten longitudinal series, in arched cross rows, elongate, with a rounded apex; lateral teeth linear, crowded, arched at the end.

Order PLEUROBRANCHIATA.

Fam. APLYSIADÆ.

APLYSIA DEPILANS? Genoa.

The small, polished, subglobular spiral (sinistral?) nucleus or apex of the older shell is, with the subapical part of the shell, covered with a membranaceous reflection of the inner lip over its surface, which is only slightly adherent to the surface of the shell and nucleus, and easily removed from it, but which gradually become thicker; the top of the shell appears to be absorbed, or more or less obliterated in the older specimens.

According to Mr. Woodward, Mr. Hancock has observed in the adult specimen two or three shells one within the other, like the *Loligines* or *Sea slaves*.

Fam. TYLODINADÆ.

TYLODINA PUNCTULATA=*T. Rafinesquii*, Philippi.

Lingual membrane very broad, brown; teeth small, uniform, very numerous, in very numerous longitudinal lines, forming straight continued uniform lines across the membrane, with an indistinct central line; the tentacles subulate, slit on the outer side; the lips are produced and acute on each side, and twisted, leaving a slight cavity on the outer side of the tip; the mantle is thin, free all round the edge and slightly thickened just within the margin, rather thicker and more free over the front of the back; the gill is single on the hinder part of the right side just under the mantle, attached the whole of its length on the inner side by a central ridge to the side of the body; the outer side is furnished with a rather thick, rather zigzag central vessel, giving out pinnated vascular branches, nearly alternating with each other on each side of the great vessel; the foot is larger than the mantle and shell, expanded, rounded behind, truncated in front and slightly emarginate in the centre under the mouth; the sexual aperture not visible in the specimen in spirits. Shell conic, patelloid, thin, slightly pearly within, with a thin, hard, horny periostraca, which is produced beyond the edge of the shell, and radiately coloured, in the dry state brittle, hard, and contracted; the apex (of the shell) subcentral, with a rather produced polished top, nucleus subglobose, with a slightly convex spire of one and a half or two rapidly enlarging subconvolute whorls; aperture ovate, rather irregular, slightly dilated on the right side; cavity simple; muscular scar subannular, with an angular inflection rather behind the middle of the right side, the form of the scar is variable, sometimes square, broad all round; in the larger more developed specimens the scar is rather horse-shoe shaped, being rather dilated at the front part of each side, and the front portion over the back of the head is narrow, linear, and transverse.

The genus was first established by Rafinesque in 1814; Blainville, who only knew it from Rafinesque's imperfect descriptions, referred it to the *Patelloida*, but Menke, Philippi and Cantraine properly considered it allied to *Pleurobranchus*, and especially *Umbrella*, and very lately Dr. Lovén stated that it was allied to *Turbonella* (Index Moll. Scand. 19). The examination of the teeth shows it to belong to the typical *Pleurobranchiata,* and the form and position of the gill its affinity with the genera *Pleurobranchus* and *Umbrella*; indeed it chiefly differs from the former genus in having an external conic patelloid shell, and from the latter in the head being produced and the mouth not sunken in a deep anterior pit.

In the British Museum there are two species of this genus.

1. *T. punctulata,* Rafin., *T. Rafinesquii,* Philippi, *T. citrina,* Joannis, Guérin, Mag. Zool. i. t. 36.

Shell thin, whitish; periostraca hard, opake, with dark brown rays. Mediterranean.

2. *T. atlantica* = *Umbrella Mediterranea* ? MacAndrew, Ann. Nat. Hist.

Shell solid, bright yellow; periostraca — ? N. Atlantic, Madeira.

Fam. UMBRELLADÆ.

UMBRELLA MEDITERRANEA.

The nucleus of this genus is very like that of *Tylodina,* subglobose, polished, sinistral, of one and a half or almost two subcylindrical, rapidly enlarging whorls; the adult shell is irregular in the outline and rather expanded on the hinder part of the right side, over the gills; the muscular scar is annular, continued, and of nearly uniform breadth, but slightly interrupted in various parts. The chief difference between the shell of *Tylodina* and *Umbrella* is, that the shell of the former is more elevated, very thin, covered with a hard, rather paleaceous periostraca, and the muscular scar is furnished with an angular inflation on the hinder parts of the right side; a sinistral nucleus is found on several others; shells as the genera of *Pyramidellidæ.*

Fam. PROSERPINIDÆ.

PROSERPINA.

Respiratory cavity open; mantle free from the back of the neck, with a double edge, the outer one rather reflexed; foot moderate, truncated in front, acute, and keeled above behind; muzzle short, truncated, annulated, with a triangular inferior mouth; tentacles 2, lateral, far apart, tapering and acute; eyes moderate, sessile, at the outer side of the base of the tentacles; the front part of the back of the foot concave, surrounded by a continuation of the mantle, forming a fleshy submarginal fringe, which is fuller (when contracted in spirits), crumpled and folded on itself on the left side. Operculum none.

4. DESCRIPTIONS OF THIRTY-FOUR NEW SPECIES OF BIVALVE MOLLUSCA (LEDA, NUCULA, AND PYTHINA) FROM THE CUMINGIAN COLLECTION. BY ARTHUR ADAMS, F.L.S. ETC.

1. PYTHINA ARCUATA, A. Adams.

P. testa transversa, elongata, inæquilaterali, triangulari, latere antico breviore, subtruncato, ad umbonibus angulato, postico longiore, rotundato; margine ventrali arcuato, in medio sinuato, irregulariter hiante; alba concentrice striata, epidermide fusca radiatim striata induta.

Hab. Isle of Zebu, adhering to *Lingula anatina* at the upper edge, sandy mud, 3 fathoms. Mus. Cuming.

This is an arcuated triangular species with the anterior side of the valves angulated, and the surface covered with a fuscous epidermis striated towards the ventral margin.

2. PYTHINA CUMINGII, A. Adams.

P. testa tenui, elongato-transversa, subtrigonali, æquilaterali, umbonibus acutis medianis, epidermide tenui virido-fusca induta, concentrice striata, radiatim sulcata, sulcis ad marginem ventralem distinctioribus, umbonibus lævigatis, corrosulis, margine ventrali in medio sinuato, intus inciso-crenulato.

Hab. Gindulman, Isle of Bohol, sandy mud, 8 fathoms; Himmamailan, Isle of Negros, sandy mud, 3 fathoms. Mus. Cuming.

This is the largest species of *Pythina* yet known, the transverse diameter being about one inch. The shell is thin, nearly smooth, and covered with a brownish-green epidermis, and with the surface near the beak eroded.

3. PYTHINA PAULA, A. Adams.

P. testa parva, transverso-elongata, trigonali, æquilaterali, ad umbones subangulata, latere postico angustiore, antico rotundato; concentrice striata, albida, epidermide tenui fulvicante induta; margine ventrali sinuato, in medio excavato.

Hab. Raimes Island, Torres Straits (*Capt. Ince*). Mus. Cuming.

This is a small whitish species angulated near the beak and covered with a thin, pale yellowish epidermis.

4. PYTHINA PECULIARIS, A. Adams.

P. testa parva, transverso-elongata, æquilaterali, triangulari, flexuosa, alba, concentrice striata, umbonibus minutis, medianis acutis, latere postico plica angulata obliqua instructo, margine ventrali medio valde sinuato.

Hab. Ceylon (*E. L. Layard, Esq.*). Mus. Cuming.

This species is of a very remarkable form, being slightly twisted laterally, and so deeply sinuated in the ventral margin as to appear bent on itself.

5. PYTHINA TRIANGULARIS, A. Adams.

P. testa parva, æquilaterali, trigonali, alba, in medio linea impressa *divisa, concentrice striata; umbonibus perparvis medianis; margine ventrali hiante, rectiusculo, medio subsinuato.*

Hab. Bay of Manilla, sandy mud, 5 fathoms. Mus. Cuming.

This is a small white triangular shell with an impressed line in the centre of the valves, and with the ventral margin gaping and nearly rectilinear, although it is slightly notched in the middle.

6. Leda electa, A. Adams.

L. testa elongato-transversa, compressa, vix æquilaterali, lactea, solidiuscula, utrinque hiante; latere antico acuminato, rotundato, postico attenuato, rostrato, oblique subtruncato; concentrice tenuissime plicato-lirata; plicis postice evanidis, distantioribus, margine ventrali arcuato.

Hab. Santos, Brazil (*Capt. Martin*). Mus. Cuming.

This is a very beautiful milk-white *Leda*, partaking, in many particulars, of the character of *F. crenifera* and *L. costellata*, Sowerby.

7. Leda siliqua, Reeve.

L. testa ventricosa, solidiuscula, subæquilaterali, epidermide nitida fusca induta, concentrice tenuissime sulcata; umbonibus prominentibus, latere antico rotundato, postico subrostrato, oblique truncato; area postica angulata, et carina obtusa ab umbonibus ad marginem ventralem extendente.

Hab. Arctic Seas (*Sir E. Belcher*). Mus. Cuming.

This is a fine pod-like Arctic species, covered with a dark fuscous epidermis, with the hinder side angulated and obliquely truncate, and with an obtuse ridge extending from the beaks to the ventral margin.

8. Leda concinna, A. Adams.

L. testa tenuiuscula, compressa, lateribus hiante, pallide fusca, concentrice lirata, liris angustis, regularibus, subdistantibus; latere antico breviore ac rotundo, postico longiore ac rostrato; rostro producto, tenui, subrecurvato, truncato; area lanceolata, angusta, carina crenata utriusque instructa.

Hab. New Zealand. Mus. Cuming.

A rather thin compressed species slightly gaping at both ends, of a light brown colour, concentrically lirate, and with a slender beak truncate at the end.

9. Leda inornata, A. Adams.

L. testa transversa, triangulari, ovata, gibbosula, fusca; umbonibus albidis, erosis; concentrice valide sulcata, latere antico breviore et rotundato, postico acuminato, subrostrato; area lanceolata, lata ad lateribus angulata, margine ventrali regulariter arcuato.

Hab. New Guinea. Mus. Cuming.

This species is founded on a small, rather gibbose shell, covered with a fuscous epidermis, from New Guinea, coarsely sulcate and slightly beaked posteriorly.

10. **Leda fastidiosa**, A. Adams.

L. testa transversim ovata sordido albido-fusca concentrice lirata fusca, nitida, concentrice tenuiter et regulariter sulcata; latere antico subproducto ac rotundato, postico angulato ac rostrato, rostro acuminato, margine ventrali postice subsinuoso et in medio subproducto.

Hab. New Zealand. Mus. Cuming.

A shining, pale fuscous, ventricose species, very gibbose in the middle, and beautifully grooved transversely; the beak slender, pointed and recurved.

11. **Leda bellula**, A. Adams.

L. testa transversim ovata, sordide albido-fusca, concentrice lirata, liris elevatiusculis subdistantibus, umbonibus prominentibus; latere antico rotundato, postico rostrato; rostro acuto, attenuato, recurvo; area lanceolata, valde impressa, liris confertis marginata.

Hab. Australia (*Mr. Strange*). Mus. Cuming.

This is a dull dirty white or light brown shell, concentrically lirate, and with a somewhat curved and pointed rostrum; the lanceolate area is deeply impressed, and has a prominent ridge on each side.

12. **Leda inconspicua**, A. Adams.

L. testa transversim ovata, ventricosula, nitida, fusca, concentrice subtilissime sulcata; latere antico breviore et rotundato, postico longiore, subacuminato ac oblique subtruncato; area lanceolata, obscura, nymphis prominentibus, margine ventrali regulariter arcuato.

Hab. Australia. Mus. Cuming.

A shining light-brown species, rather ventricose concentrically, very finely sulcate, with the posterior side produced attenuated, and with the end obliquely truncate.

13. **Leda lugubris**, A. Adams.

L. testa solida, subgibbosa, triangulari-ovata, nigro-fusca; latere antico declivo, lunula lanceolato-cordata, impressa; latere postico acuminato ac breviter rostrato; area lanceolata, lata, lævi; concentrice lirata, liris validis distantibus postice flexuosis; margine ventrali simplici.

Hab. —— ? Mus. Cuming.

A dark, fuscous, solid shell, having very much the aspect of a *Crassatella*, with a broad impressed lunule and strong flexuous plicæ.

14. **Leda lepida**, A. Adams.

L. testa transversim ovata, ventricosa, nitida, pallide fulva, concentrice tenuiter sulcata; latere antico breviore et rotundato, *postico longiore, superne subangulato, inferne oblique rotundato; area lanceolata, utrinque carinata.*

Hab. Philippines. Mus. Cuming.

This is a shining, pale fulvous, finely sulcate species, with the hinder side rather acutely angulated above and obliquely rounded below, and with the lanceolate area ridged on each side.

15. LEDA DECORA, A. Adams.

L. testa transverso-oblonga, crassa, solida, utrinque subhiante, sordide alba, conferte et valde concentrice sulcata; latere antico rotundato, postico rostrato; rostro recurvato et oblique subtruncato; area lanceolata, depressa, carina valida crenata utriusque instructa.

Hab. West Indies. Mus. Cuming.

A transversely elongate species, with a strong crenate keel on each side of the lozenge, and somewhat resembling in appearance the *L. crenifera* of Sowerby.

16. LEDA FULGIDA, A. Adams.

L. testa transversim ovata, lævi, pallide fusca, micante, perventricosa; antice breviore et rotundata, postice acuminata et rostrata; rostro subrecurvo, margine ventrali regulariter arcuato.

Hab. Port Essington. Mus. Cuming.

This is a smooth, shining, pale-brown shell, very ventricose, rounded and short anteriorly and rostrate posteriorly, and with the rostrum rather recurved.

17. LEDA SEMISULCATA, A. Adams.

L. testa transversim oblonga, compressiuscula, lactea, nitida, concentrice sulcata, sulcis ad partem posticam obsoletis; umbonibus acutis, subcentralibus; latere antico breviore, rotundato, postico acuminato, non producto; nymphis prominentibus, oblique sulcatis; margine ventrali regulariter arcuato.

Hab. Borneo. Mus. Cuming.

A shining, rather compressed, milk-white shell, with the sulci obsolete on the posterior half, and with the hind side acuminate but not produced.

18. LEDA PLICIFERA, A. Adams.

L. testa transverso-oblonga, alba, nitida, subventricosa, oblique sulcata; latere antico rotundato, plicis 3–4 validis radiantibus instructo, latere postico carina obliqua ab umbonibus ad marginem ventralem extendente; area lanceolata, carina crenata duplici utrinque instructa; margine postico truncato et valde emarginato, margine valvarum simplici.

Hab. China Seas. Mus. Cuming.

Strongly notched at the hind margin, and with three or four plicæ at the anterior part, and with a double crenate keel on each side of the lunule.

19. YOLDIA LEPIDULA, A. Adams.

Y. testa transversa, oblonga, utrinque hiante, tenui, inæquilaterali;

latere antico breviore rotundato, postico longiore, subangulato; pallide fusca, nitida, tenuiter concentrice sulcata, margine ventrali regulariter arcuato.

Hab. Coast of Borneo. Mus. Cuming.

A thin pale-brown species, with the hind side rather angulated, but not distinctly rostrate.

20. NUCULA BELLOTII, A. Adams.

N. testa oblique ovata, ventricosa, valde inæquilaterali; latere antico breviore; lunula cordata, conspicua; umbonibus erosis; epidermide crassa, nitida, olivacea induta, concentrice plicata, plicis validioribus ad marginem ventralem; area postica et antica pallidis.

Hab. Arctic Seas (*Sir E. Belcher*). Mus. Cuming.

The beaks are much eroded, and the valves are strongly plicate towards the ventral margin. I have dedicated this fine Arctic species to the memory of the gallant Bellot, who unfortunately lost his life in the search after Sir John Franklin and his brave companions.

21. NUCULA NITIDULA, A. Adams.

N. testa perobliqua, gibbosa; latere antico oblique subtruncato, postico rotundato, producto; nitida, obscure sulcata, sub lente radiatim striata; umbonibus subacutis; pallide fusca, margine valvarum tenuiter crenulata.

Hab. New Zealand.

A very oblique gibbose species, radiately striated under the lens, and produced and rounded posteriorly; it is obscurely concentrically sulcate.

22. NUCULA LAYARDII, A. Adams.

N. testa transversim ovata, compressiuscula, nitida vix lævi, obsolete concentrice sulcata; umbonibus margaritaceis; latere antico breviore excavato, ad partem ventralem subproducto; pallide viridi-fusca, margine valvarum simplici.

Hab. Ceylon (*E. L. Layard, Esq.*). Mus. Cuming.

A pale greenish-brown *Nucula*, with the anterior side short and excavated, and the surface obscurely sulcate.

23. NUCULA MARGARITACEA, A. Adams.

N. testa transversim ovata, sublævi, nacrea splendida tenuiter concentrice obsoletim striata; lunula et area lanceolata in medio prominentibus; latere antico subangulato et producto, margine valvarum simplici.

Hab. Malacca (*Dr. Traill*). Mus. Cuming.

This is a rather smooth ovate species, glistening with a nacreous lustre, especially towards the beaks.

24. NUCULA PAYTENSIS, A. Adams.

N. testa perobliqua, transversim ovata, gibbosa; latere antico brevissimo; epidermide fusca induta; lunula et area lanceolata, *valde transversim sulcatis, concentrice sulcata, decussatim striata, umbonibus erosiusculis, margine ventrali tenuiter crenulata.*

Hab. Payta, Peru. Mus. Cuming.

A very oblique, ovate, gibbose species, concentrically grooved and decussately striated.

25. Nucula gibba, A. Adams.

N. testa perobliqua, solida, gibbosa, pallide fusca; latere antico abrupte truncato; lunula lata, cordata; area lanceolata, utrinque serie tuberculorum transversorum instructa; lævi, nitida, obsolete radiatim striata, margine valvarum valde crenulato.

Hab. Australia (*Mr. Strange*). Mus. Cuming.

This is a very oblique, solid, gibbose species, with a wide cordate lunule, and with a row of transverse tubercles on each side of the lanceolate area.

26. Nucula crenulata, A. Adams.

N. testa perobliqua, transversim ovata, fusca; latere postico producto, rotundato; area lanceolata, transversim valde sulcata; concentrice valde sulcata, interstitiis striis radiantibus crenulatis, pallide fusca; margine crenulato.

Hab. Guadaloupe. Mus. Cuming.

27. Nucula simplex, A. Adams.

N. testa oblique ovata, tenui, compressa, pallide olivacea, vix lævi, concentrice obsolete striata; lunula lanceolata; nymphis prominulis; latere postico producto, rotundato, margine valvarum simplici.

Hab. Sydney (*Mr. Strange*). Mus. Cuming,

Like *N. Strangei*, but with the anterior side shorter and more truncate.

28. Nucula Strangei, A. Adams.

N. testa oblique ovata, inæquilaterali, subcompressa; epidermide nitida, aureo-viridi induta; latere antico breviore, ad lunulam excavato, postico longiore rotundato; area lanceolata, elevata, superficie obscure concentrice sulcata.

Hab. New Zealand (*Mr. Strange*). Mus. Cuming.

29. Nucula paulula, A. Adams.

N. testa perobliqua, gibbosula, latere antico declivi, umbonibus erosulis; fusca, concentrice irregulariter sulcata; latere postico rotundo et producto, margine ventrali crenulato.

Hab. Japan. Mus. Cuming.

A small brown, very inequivalve, solid, gibbose species.

30. Nucula striolata, A. Adams.

N. testa compressiuscula, oblique ovata, umbonibus subacutis, pallide olivacea, obsolete concentrice sulcata, valde radiatim striata; margine ventrali crenulato.

Hab. China Seas. Mus. Cuming.

31. NUCULA SULCATA, A. Adams.

N. testa valde convexa, oblique ovata, umbonibus prominulis, latere antico breviore rotundato; pallide olivacea, concentrice valde sulcata, radiatim striata, striis ad marginem valvarum validioribus; margine valvarum crenulato.

Hab. New Zealand. Mus. Cuming.

32. NUCULA CASTANEA, A. Adams.

N. testa ovali, perobliqua, subcompressa, castanea, latere antico breviore truncato, lunula in medio prominenti, latere postico declivi, rotundo; vix lævi, obsolete concentrice sulcata, obscure radiatim striata; margine valvarum creberrime crenulato.

Hab. New Zealand. Mus. Cuming.

An oval, very oblique, rather compressed *Nucula*, with the anterior side truncate and the lunule prominent in the middle, nearly smooth, but obsoletely striated, and with the margin very finely crenulated.

33. MACTRA MARIÆ, A. Adams.

M. testa ovato-transversa, compressiuscula, solida, inæquilaterali, latere antico paulo breviore, epidermide olivaceo-fulvicante induta, maculis rotundatis conglomeratis et distinctis rufo-fuscis irregulariter picta, umbonibus albidis, transversim sulcata, sulcis postice corrugato-plicatis; lunula areaque sulcatis; intus alba; pallii impressione margine inferiore remoto, sinu profundo, oblique triangulari.

Hab. ——? Mus. Cuming.

This is a large and handsome species of *Mactra*, ornamented with rounded, distinct, and oblong conglomerate spots, which are most numerous towards the beaks.

34. SCROBICULARIA SEYCHELLARUM, A. Adams.

S. testa transversim ovata, inæquilaterali, latere antico breviore rotundato, postico longiore declivi, subattenuato et rostrato, utrinque vix flexuoso, lactea, nitida, sulcis concentricis posticis et obliquis anticis divaricatim sculpta; cardine ligamento externo, cartilagine interno in fossa obliqua prominenti posito; sinu pallii impressionis valido et profundo.

Hab. Seychelles (— *Ricketts, Esq.*). Mus. Cuming.

This is a very peculiar shell, with the generic characters of *Scrobicularia*, or rather those of the subgenus forming the *Capsa* of Bosc, or *Scrobicularia b.* of Schumacher, and which are usually regarded as Tellinas.

5. OBSERVATIONS ON STRONGYLUS FILARIA AND BOTAURUS STELLARIS. BY EDWARDS CRISP, M.D.

Dr. Crisp exhibited specimens and drawings of *Strongylus filaria*, which he discovered had lately proved so destructive to lambs in many parts of England. In several lambs examined by Dr. Crisp millions of these entozoa and their ova were found in the bronchial tubes and in the intestinal canal, and he believed that many of the ova of these worms had been mistaken for *Cysticerci*; but the various stages of development could be readily traced under the microscope. Dr. Crisp had tried many experiments on the living worms as to the effect of poisons and other agents, and he believed that salt or sulphur given with the food, and the inhalation of sulphurous gas, under proper superintendence, would be the most likely means of destroying these parasites.

Dr. Crisp also placed on the table some parts of the anatomy of the Common Bittern (*Botaurus stellaris*), two of which birds (now comparatively rare) had recently been shot on the eastern coast of Suffolk. The bird from which the specimens were taken was a fine male, measuring from the tip of each wing 4 feet 1 inch, and from the point of the beak (when extended) to the lower part of the tarsus 3 feet. Among the peculiarities alluded to, was the smallness of the sternum, which measured only 3 inches longitudinally; the depth of keel only $\frac{4}{4}$ of an inch, and the lateral margins the same. The trachea measured twelve inches in length, and consisted of 198 imperfect rings; the bronchi of 20 semicircular elastic cartilages, readily approximated, and hence the production of the peculiar sound from which the bird takes its name. The stomach which was exhibited was large, and contained near its cardiac orifice a circle of gastric glands. A roach, weighing about four ounces, was digested at this part, but the tail, which was in the œsophagus, was intact. To show the voracity and capacity of swallow of this bird, Dr. Crisp said, that Sir W. Jardine and Mr. Yarrell had both taken a Water Rail from the stomach and œsophagus, and in Mr. Yarrell's specimen there were six small fish in addition. The pectinated claw was also exhibited, Dr. Crisp believing that it served for the purpose of cleaning the beak and mouth of the bird.

April 8, 1856.

Dr. Gray, F.R.S., in the Chair.

The following papers were read:—

1. On Dinornis (Part VII.): containing a Description of the Bones of the Leg and Foot of the Dinornis elephantopus, *Owen*. By Prof. Owen, F.R.S., V.P.Z.S., &c.

Mr. Walter Mantell having, on his recent return from New Zealand, provisionally deposited his very extensive collection of remains of Dinornithic and other birds in the British Museum, I have gladly acceded to the wishes of that successful and enterprising collector, and of my friend the able Keeper of the Mineralogical Department of the Museum, to devote the leisure at my command to the examination of this interesting and valuable collection.

I had advanced as far as the determination of the bones of the leg, and their classification according to their species, when the distinctive characters of one series of these bones irresistibly brought a conviction that they belonged to a species of *Dinornis* that had not previously come under my notice, and a species also which, for the massive strength of the limbs and the general proportions of breadth or bulk to height of body, must have been the most extraordinary of all the previously restored wingless birds of New Zealand, and unmatched, probably, by any known recent or extinct species of this class of birds.

I was so much struck by the form and proportions of the metatarsal bone described in the memoir read to the Zoological Society, June 23, 1846, and figured in pl. 48, figs. 4 and 5, vol. iii. of the 'Zoological Transactions,' that I alluded to it as "representing the pachydermal type and proportions in the feathered class*," and the bone unquestionably indicated at that period "the strongest and most robust of birds." By the side of the metatarsus of the species which I have now to describe, and for which I propose the name of *elephantopus*, that of the *Dinornis crassus*, however, shrinks to moderate, if not slender dimensions. But the peculiarities of the elephant-footed *Dinornis* stand out still more conspicuously when the bones of its lower limbs are contrasted with those of the *Dinornis giganteus*.

I propose, in the present memoir, to combine with the account of the leg- and foot-bones of the *Dinornis elephantopus*, that of the bones of the lower limb of the *Dinornis crassus*, which had not previously been described, and to bring out their characteristics by comparison with the bones of other species, especially those of the *Dinornis robustus*.

Commencing with the femur, I shall premise the following table of admeasurements of that bone in *Dinornis*:—

Dimensions of the femur in	*D. robustus.*		*D. elephantopus.*		*D. crassus.*	
	In.	Lines.	In.	Lines.	In.	Lines.
Length	14	2	13	0	11	10
Transverse breadth of proximal end	6	0	5	10	4	5
Fore-and-aft breadth of do......	5	0	4	5	3	9
Transverse breadth of distal end ...	6	0	5	11	4	7
Fore-and-aft breadth of do.........	4	3	3	9	3	5
Circumference, least, of shaft	7	10	7	9	6	0

The above comparative dimensions bring out the characteristic proportions of the femur of the *Dinornis elephantopus*, as shown by its greater thickness and strength. As compared with the femur of the *Dinornis robustus*, this character is remarkably exemplified on a comparison of their articular extremities. Had these parts alone of the *Dinornis elephantopus* been preserved and submitted to me, I should have scarcely ventured upon a conclusion as to their specific distinction from the *Dinornis giganteus* or *Dinornis robustus*, the correspondence of configuration being so close, and the difference of size so slight.

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* *Ib.* p. 325.

The articular surface is continued from the head upon the upper part of the neck, expanding as it approaches the great trochanter, along the summit of which it is terminated by a ridge. In both species the surface for attachment of the ligamentum teres is formed, as it were, by a portion of the inner and back part of the hemisphere having been cut off obliquely with a slight excavation. The corresponding ligamentous surface in the head of the femur of the *Dinornis crassus* is relatively smaller, less depressed and less defined. The upper and fore part of the trochanter is less produced relatively to the breadth of the supra-trochanterian articular surface in the *Dinornis elephantopus*. In this species the sub-circular rough surface for the attachment of the *iliacus internus* muscle is relatively nearer to the head of the bone than in the *Dinornis robustus*; the rugged and thick fore part of the great trochanter descends lower upon the shaft; indeed, the shortness of the entire bone seems to depend chiefly on the shaft being relatively shorter in the *Dinornis elephantopus*. The intermuscular ridge continued from the trochanterian one seems to bifurcate sooner in the *Dinornis elephantopus*. The depression behind the trochanterian ridge is less deep in the *Dinornis elephantopus*. The oblique rotular channel is relatively as wide and deep as in the *Dinornis robustus*, but the inner boundary formed by the fore part of the inner condyle is shorter.

At the back part of the shaft the medullo-arterial foramen is relatively nearer the proximal end of the bone; the two tuberosities below this are closer together. The two sides of the fibular groove are at a more open angle, and the groove is less deep in the *Dinornis elephantopus*, the outer side being less produced.

The antero-posterior breadth of the outer and inner condyles is equal in the *Dinornis elephantopus* as in the *Dinornis robustus*; but in the *Dinornis crassus* that dimension of the outer condyle exceeds the same dimension in the inner one, and the fibular groove is more open or shallow than in the *Dinornis elephantopus*.

The generic modifications of the femur are, however, very closely preserved in each species, being strictly of the type ascribed to the genus *Dinornis* in my original memoir, Zool. Trans. vol. iii. p. 247.

Dimensions of the tibia in	*D. robustus.*			*D. elephantopus.*			*D. crassus.*		
	Ft.	In.	Lines.	Ft.	In.	Lines.	Ft.	In.	Lines.
Length	2	8	3	2 1	0 9	0 6*	1 1	7 6	6* 6
Transverse breadth of proximal end		7	6		7 7	5*		6	2
Fore-and-aft breadth of do.......		4	9		4 4	6* 3		3	6
Least circumference of shaft.........		6	9		6	5		4	10
Transverse breadth of distal end...		4	4		4 4	2*		3	3

* The extremes of size in a series of several bones are here given.

The characters of the upper end of the tibia of the *Dinornis elephantopus* closely accord with those of the *Dinornis robustus*, and the difference of size, as exemplified in the foregoing table, is so slight, that had this extremity only of the bone reached me, I should most probably have referred it to the *Dinornis robustus*. The almost flat articular surface for the inner condyle of the femur is somewhat less in its shorter diameter; the epicnemial ridge is less extended transversely; the ectocnemial ridge curves more strongly outwards; but there are individual varieties in all these characters in the tibiæ before me. All the tibiæ, however, differ in the earlier subsidence of the ridge continued downwards from the procnemial plate, which ridge is continued in *Dinornis robustus* uninterrupted by that above the inner division of the distal trochlea. The space between the ecto- and pro-cnemial plates in the *Dinornis crassus* is relatively greater than in either of the above larger species; the ridge continued from the procnemial plate is interrupted as in the *Dinornis elephantopus*. The fore part of the tibia internal to the procnemial ridge is impressed by irregular vascular grooves. The fibular ridge is interrupted by a smooth tract, in or near which is the orifice of the canal for the obliquely descending medullary artery in all the species of *Dinornis*. The upper division of the ridge is shorter in the *Dinornis elephantopus* than in the *Dinornis robustus*, and relatively shorter than in the *Dinornis crassus*. The surface between the fibular ridge and the inner border of the shaft at the back part is concave transversely in *Dinornis elephantopus*, not merely flat as in *Dinornis robustus* and *Dinornis crassus*, and, as it descends, it continues longer a flat surface before it changes gradually to a convex one. The oblong rough insertional surface above the inner condyle is relatively shorter and better defined in the *Dinornis elephantopus* than in the *Dinornis robustus*. On the characteristic fore part of the lower end of the tibia, that bone in the *Dinornis elephantopus* repeats all the modifications ascribed to the *Dinornis* in my memoir on the *Gastornis*, or large fossil bird from the Paris eocene*.

The tendinal canal inclines obliquely inwards parallel with the inner border of the expanding end, near which it is placed; the bony bridge spans across it from a flattened tubercle developed from the lower part of the outer pier. The outlet of the canal is as wide as in the *Dinornis robustus*; its aspect is obliquely forwards and downwards. External to the tubercle is an oblique rough depression, relatively narrower and better defined than in the *Dinornis robustus*. The inner condyle is relatively narrower and more produced forwards than in the *Dinornis robustus*, resembling more the proportions of that part in the *Dinornis crassus*. The general form and oblique direction of the wide distal trochlear articulation are closely repeated in all the species, the canal being rather more sharply defined behind in the *Dinornis elephantopus* than in the *Dinornis robustus*. The depression on the entocondyloid surface is less deep in the *Dinornis elephantopus* than in the *Dinornis robustus*.

The above-specified differences, as well as all that I have noticed in the tibiæ of other species of *Dinornis*, are so inferior in degree to those which I have found in closely allied genera, and even in different species of the same genus, of other large land- and wading-birds, as *e. g.* in species of *Ciconia*, and in the existing Struthious genera, as to leave a strong impression on my mind of the generic affinity of the species which I have referred to *Dinornis* and *Palapteryx*, and which species have been divided, with a more liberal imposition of terms, by Dr. Reichenbach into the nominal genera *Anomalopteryx*, *Movia*, *Emeus*, *Syornis*, &c., no additional facts or characters being given by that nomenclator than are to be found in the pages or plates of my own memoirs.

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* 'Proceedings of the Geological Society.'

The fibula of the *Dinornis elephantopus* remains, as in other *Dinornithes*, and as in the existing struthious genera, permanently distinct from the tibia; as a general rule in birds, it soon becomes anchylosed to that bone. In the species now defined it is a straight styliform bone, 14 inches 6 lines in length. The head is subcompressed and produced, as if slightly bent backwards; the upper articular surface is convex from before backwards, almost flat transversely. The head of the bone is flattened on the inner side, almost flat, but a little convex on the outer side. The fore-and-aft dimension is 2 inches 9 lines, the transverse diameter 1 inch 3 lines. Below the head the bone assumes a trihedral form, with the sides convex, gradually tapering, and blending into a shape elliptic in transverse section, and ending in a point about 9 inches above the ankle-joint. The outer surface of the shaft of the fibula is impressed by two oblong rough surfaces for the insertion of muscles, the upper one 2 inches 9 lines in length; the inner part, which is ridge-like, dividing the fore from the back surface of the bone, presents a rough surface with a median interruption, for the ligamentous attachment to the fibular ridge of the tibia.

Dimensions of the Metatarse of.....	*D. giganteus.*		*D. robustus.*		*D. elephantopus.*		*D. crassus.*	
	In.	Lines.	In.	Lines.	In.	Lines.	In.	Lines.
Length	18	6	15	9	9	3	8	8
Transverse breadth of proximal end ...	4	3	4	6	4	5	3	3
Transverse breadth of distal end.........	5	4	5	3	5	4	3	9
Least breadth of shaft......................	2	3	2	0	2	5	1	9
Fore-and-aft breadth of proximal end...	3	2	3	2	2	10	2	5
Circumference of ditto.......................	12	0	12	9	12	0	9	3
Least circumference of shaft	6	3	5	3	6	6	4	6
Breadth of middle trochlea...............	1	10	2	3	2	2	1	8
Length of do. following the curve	5	9	5	4	5	3	4	0

I had hitherto regarded the metatarse of the *Dinornis crassus* (Zoological Transactions, vol. iii. pl. 48, figs. 4 and 5), as presenting the most extraordinary form and proportions of all the restored species of huge wingless birds of New Zealand; but it is strikingly surpassed in robustness and in great relative breadth and thickness by the same bone of the present species, which chiefly on that account I have proposed to name *elephantopus*. Only in the great Maccaws and Penguins do I know of a metatarse with similar proportions to that of this most robust-legged of birds. But the Parrot tribe present those peculiar modifications of the distal trochleæ, with the strong articulation for the back toe, which relate to the scansorial modifications of the bird's foot; and the Penguins associate with their broad and short metatarse a characteristic retention of much of the primitive separation of the three constituent bones. In the *Dinornis elephantopus* these elements have become as completely coalesced as in any other species, and the general characters of both proximal and distal ends accord with those in previously described species. On a more special comparison of the metatarse of the *Dinornis elephantopus* with that of its nearest congener, the *Dinornis crassus*, the following differences present themselves:—The entocondyloid depression is deeper, its fore-and-aft diameter is greater, and its transverse diameter less, than in the ectocondyloid one; but the breadth of the entocondyloid depression is relatively greater, and its depth somewhat less in the *Dinornis elephantopus* than in the *Dinornis crassus*. The transverse convexity dividing the two condyloid depressions is relatively broader in the *Dinornis elephantopus*; and the rough surface external to the anterior intercondyloid prominence is more strongly marked. The two calcaneal ridges present an equal prominence in *Dinornis elephantopus*; the ectocalcaneal one is the more prominent in *Dinornis crassus*. The anterior surface of the metatarse differs chiefly in the proportions indicated in the table of admeasurements from that in the *Dinornis crassus*; like most of the metatarses of that species, one or more vascular foramina occur above the subcircular rough surface of insertion of the *flexor pedis*, which occupies the lower part of the shallow depression in the upper and fore part of the shaft. Along the lower half of the shaft, the median longitudinal, and progressively widening prominence, due to the middle of the coalesced metatarsal bones, is rather more marked than in *Dinornis crassus*. The inner side of the shaft is marked at its upper half by the oblique rough tract indicative of the insertion of the powerful aponeurosis of the gastrocnemii muscles. At the back surface the upper part of the middle metatarsal is relatively less prominent than in *Dinornis crassus*. The two vascular foramina occupy corresponding relative positions. All other notable differences are those of size and proportion.

From the metatarse of the *Dinornis robustus* that of the *Dinornis elephantopus* differs most strikingly in its proportions of length to breadth, being little more than half the length, but of nearly equal breadth; the distant trochleæ, however, being relatively less expanded than in the *Dinornis robustus*.

The anterior vascular perforation is less than in the *Dinornis robustus*; the insertional roughness for the *tibialis anticus* below the foramen is of equal size. The upper half of the fore part of the metatarse of the *Dinornis robustus* is longitudinally channeled in the *Dinornis robustus*, not in the *Dinornis elephantopus*. The corresponding part of the back part of the shaft is much more prominent in the *Dinornis robustus*. The characteristics of the metatarse of the *Dinornis elephantopus* are more strongly manifested in the comparison with that of the *Dinornis giganteus*, of which bone it has only half the length, other dimensions being equal or even greater.

Of the depression, which is very faint, in the *Dinornis robustus* for the ligamentous attachment of the rudimental back toe there is no trace in the metatarse of the *D. elephantopus.*

The bones of the foot I shall compare with those of the *Dinornis robustus*,* to which they make the nearest approach in size. Equalling, or nearly equalling, the phalanges of that bird in breadth and thickness, they differ chiefly in shortness, but in a less degree than the metatarsi differ. These proportional characters of the species are best and easiest given in the plates. A few minor differences, however, may be noticed : the outer portion of the proximal end of the first phalanx of the inner toe is broader in proportion to its fore-and-aft diameter in *Dinornis elephantopus*. The inner portion of the proximal end of the first phalanx of the outer toe presents the like difference: the general form of that articular surface is less triangular and more oval in both the specified phalanges of the *Dinornis elephantopus*, one, the under side, being indented as usual in the proximal phalanges of the inner and outer toes.

The modifications in the other phalanges, besides those of size and proportion, are not greater or other than might be expected in different species of the same genus.

The first evidence of the *Dinornis crassus* reached me from a turbany deposit at Waikawaite, in the Middle Island; it formed part of the collection there made by Mr. Earl. I have never received any evidence of the species from the North Island.

In like manner the bones of the much larger bird, which I have called *Dinornis robustus*, and which I was formerly inclined to regard as a variety of the *Dinornis giganteus*, appear to be peculiar to the Middle Island; or at least have not hitherto been found in any locality of the North Island.

The richer series of illustrations of both the *Dinornis robustus* and *Dinornis crassus* in the collection of Mr. Walter Mantell are from localities in the Middle Island; and the abundant illustrations of the *Dinornis elephantopus* are exclusively from one locality in that island; they were obtained at Ruamoa, three miles south of Oamaru Point, or that called the 'Vast Rocky Head' in the new Admiralty map. This fact might give rise to the idea that the original range or locality of the *Dinornis elephantopus* had been a restricted one, unless, at the period when the species flourished, the geographical extent of the Middle Island was widely different from what it now is. Yet Mr. W. Mantell has obtained strong, if not unequivocal evidence, that the *Dinornis elephantopus* and *Dinornis crassus* existed contemporaneously with Maori natives. The bones described in the foregoing pages are in a recent and most perfect condition. They retain the usual proportion of animal matter and have undergone no mineral change.

From the sum of our present information respecting the localities of the several species of *Dinornithidæ*, we may infer that most, if not all, the species of the North Island were distinct from those of the South Island. To birds that could neither fly nor swim—at least swim well, —the channel called Cook's Straits would prove an effectual bar to any migration from one island to another. With each successive addition of materials for a complete history of this most remarkable family of birds, I feel, however, chiefly impressed with the conviction of how little comparatively we still know respecting them, and how much more is likely, through the enlightened co-operation of active, resolute, and accomplished explorers, like Mr. Walter Mantell, to be, hereafter, contributed towards a perfect history of the New Zealand wingless birds.

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* See Trans. Zool. Soc. vol. iv. pl. 1.

Of the very remarkable species of *Dinornis* based upon the powerfully developed limbs, the bones of which are described in the foregoing pages, Mr. Mantell's collection includes right and left femora, right and left tibiæ, right and left fibulæ, right and left metatarsi, and a considerable collection of toe-bones, from which, probably, other entire feet might be reconstructed, in addition to the one of the left foot now submitted to the Society. There are also the two femora and the two metatarsi of an immature bird, apparently, by their proportions, from one individual, to which may also belong the proximal end of a tibia, wanting the articular epiphysis. The femora, as in the other birds, retain the two articular ends, which are simply rougher than in the adult, having been covered by a thicker cartilage, but are not developed upon distinct osseous pieces, as in land mammals. The proximal epiphysis is wanting in both the immature metatarsi, exhibiting the separate expanded ends of the three constituent bones terminating in the three prominent trochleæ below. The length of the femur of this young bird is 11 inches, that of the metatarse 7½ inches. They already present the characteristic robustness of the adult bird*.

2. On a new Turkey, Meleagris mexicana.

By J. Gould, Esq., F.R.S., &c.

In the lapse of time the origin of several of the animals which man has subjected to his dominion, and which are of the greatest service to his necessities or his pleasures, has become involved in obscurity. As instances in point we may cite among quadrupeds the Camel, the Horse, the Dog, &c., and among birds the various *Gallinaceæ*, *Anatidæ* and *Columbidæ*, all of which were derived from Asia. The productions of the New World have not yielded such ready obedience to his sway, since no one of its quadrupeds has yet been domesticated, and only one of its birds—the Turkey; but a like fate, if I mistake not, has attended the origin of this solitary acquisition, which, although the bird has not been known to us more than 300 years, is equally wrapped in uncertainty.

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* This paper will appear in the Transactions of the Society, illustrated with figures of the bones.

"So involved in obscurity," says Mr. Martin, "is the early history of the Turkey, and so ignorant do the writers of the sixteenth and seventeeth centuries appear to have been about it, that they have regarded it as a bird known to the ancients by the name of 'Meleagris,' namely, the Guinea-fowl or Pintado, a mistake which was not cleared up until the middle of the eighteenth century. The appellation of Turkey which the bird bears in our country, arose, according to Willoughby, from a supposition that it came originally from the country so called. Mexico was first discovered by Grijalva in 1518. Oviedo speaks of the Turkey as a kind of peacock abounding in New Spain, which had already, in 1526, been transported in a domestic state to the islands and the Spanish Main, where it was kept by the Christian colonists. It is reported to have been introduced into England in 1524, and is enumerated as among the dainties of the table in 1541. In 1573 it had become the customary Christmas fare of the farmer." Every author who has written on the subject since the days of Linnæus has considered it to be derived from the well-known wild Turkey of North America, but on account of the great differences which are met with among our domestic Turkeys, and the circumstance of the wild Turkeys recently imported from North America not readily associating or pairing with them, I have for some years past entertained a contrary opinion. This opinion may be met by some persons with the remark, that similar and even greater differences occur among our domestic poultry. True—but I believe that these differences are due to an admixture of two, three, or more species, and that in no case would the domestication of a single species produce characters so decided as those exhibited by the two birds now on the table.

In Canada and the United States the Turkey is partially migratory, visiting those countries during the summer, for the purpose of breeding, and although some writers state that it is a native of Mexico, I can hardly think it likely that it ranges very far south in the latter country, for, from the southern boundary of Canada to Mexico is nearly 2000 miles, and it is unlikely, I think, that a bird of the cold regions of Canada should also be indigenous to the hotter country of Mexico, whence, and not from North America, the Turkey was originally introduced into Europe by the Spaniards early in the sixteenth century.

Believing this bird to be distinct from the North American species, it becomes necessary that one of them should receive a new name, and a question then arises to which of the two should it be given. My opinion is, that it will be better to retain the term *Gallopavo* for the North American species, and to call the present one *Mexicana*, after the country of which it is a native. Linnæus' *Meleagris Gallopavo* is founded upon the *Gallopavo sylvestris* of Brisson's 'Ornithologie,' vol. i. p. 162, and upon Ray's New England Wild Turkey, both of which names appertain to the North American species; consequently the term *Mexicana* would be a fit appellation for the present bird. I may mention, that it is the only example of a Turkey I have ever seen from Mexico, and that it was brought to this country by the late Mr. Floresi, a gentleman whose energy as a collector was only equalled by the honourable career of a moderately long life, during which he was connected with the Real del Monte Mines in Mexico. Mr. Floresi travelled himself, and kept collectors, who penetrated into the remotest parts of that country; and many were the fine species he by this means communicated to the world of science. I may mention the splendid *Picus imperialis, Calurus neoxenus*, and many Humming Birds, as some of the species which but for his researches would have been unknown to us.

In size this new Turkey exceeds that of the largest specimens of the North American species; but it has shorter legs, a considerably larger and more broadly expanded tail, conspicuously zoned with brown and black, and terminated with white; the tail coverts are very profusely developed, largely tipped with white, and bounded posteriorly with a narrow line of black, their basal portions being rich metallic bronze. The same arrangement of colouring also prevails on the feathers of the lower part of the flanks; and on the under tail coverts, where it is particularly fine; the centre of the back is black, with green, purplish and red reflexions; the back of the neck, upper part of the back, and shoulders, are in some lights bronzy, in others the colour of fire; the greater wing coverts are uniform bronzy brown, forming a conspicuous band across the wing; all the primaries are crossed by mottled bars of blackish brown and white, freckled with brown; all the under surface is fiery copper, intensely brilliant in certain lights, and becoming darker towards the flanks.

Total length 4 feet 4 inches; bill $2\frac{1}{2}$ inches, wing $21\frac{3}{4}$ inches, tail 16 inches, and when spread about 24 inches across; tarsi $6\frac{3}{4}$.

In the Report of an expedition down the Zuni and Colorado Rivers by Captain L. Sitgreaves, lately published in America, the following passage occurs at p. 94, in reference to Wild Turkeys:—

"They are also found in New Mexico, in the neighbourhood of the copper-mines. I am told by our officers that those found there are of enormous size. Mr. Leroux, our guide, informed me that the Turkeys of the Gila River were different from those found east of the Rio Grande, and that they have much white about them."

These are doubtless identical with the bird under consideration.

Since the above remarks were in type, I have been informed by J. H. Gurney, Esq., M.P., that he some years since received the skin of a Wild Turkey from the neighbourhood of the Real de Monte mines in Mexico, which he considers to be the same as the bird above described; this specimen is now in the Museum at Norwich.

3. SYNOPSIS AVIUM TANAGRINARUM.—A DESCRIPTIVE CATALOGUE OF THE KNOWN SPECIES OF TANAGERS.

BY PHILIP LUTLEY SCLATER, M.A. F.Z.S., &c.

Part I. containing the genera *Pitylus, Orchesticus, Diucopis, Saltator, Psittospiza, Lamprospiza, Cissopis, Oreothraupis, Arremon, Phœnicophilus, Buarremon* and *Chlorospingus*.

Genus I. PITYLUS.

Pitylus, Cuv. Regn. An. 1829, ii. p. 413.
Cissurus, Reich. Av. Syst. Nat. pl. 77.
Periporphyrus, Reich. l. c.
Caryothraustes, Reich. l. c.

Rostrum maximum, breve, altum, latum, quasi coccothraustinum; mandibulæ superioris marginibus fortiter sinuatis et mandibulam inferiorem tegentibus; culmine multum incurvo: alæ modicæ, remigibus tertia, quarta et quinta longissimis: cauda plus minusve elongata, plerumque rotundata: tarsi robusti.

The birds of this genus are the most finch-like of the Tanagers, and I have some doubts whether they are not as closely allied to *Guiraca, Hedymeles*, and other *Coccothraustine* forms, as to the present group. We want more information as to their habits and internal structure before this point can be satisfactorily settled.

a. *Pitylus*.

1. PITYLUS GROSSUS.

Coccothraustes americana cærulea, Briss. Orn. vi. App. p. 89.
Grosbec bleu d'Amérique, Buff. Pl. Enl. 154.
Loxia grossa, Linn. S. N. i. p. 307.
Pitylus grossus, Gray, Gen. p. 362; Schomb. Guian. iii. 677; Bp. Consp. p. 503; Cab. M. H. p. 143.
White-throated Grosbeak, Lath. G. H. v. 268.

Cano-cærulescenti-schistaceus; facie, gutturis lateribus et cervice antica nigris; gula media alba. ♀ *minus cærulescens et nigro colore carens.*

Long. tota 7·2, alæ 3·7, caudæ 3·3.

Hab. Cayenne; British Guiana (*Schomb.*); Bogota; Pebas, Upper Amazon (*Castelnau* et *Deville*).

Mus. Brit., Paris., Derbiano, &c.

2. PITYLUS FULIGINOSUS.

Loxia fuliginosa, Daud. Orn. ii. 372 (1801).
Coccothraustes cærulescens, Vieill. Nov. Dict. xiii. 546 (1817), et Enc. Meth. 1016.
Fringilla gnatho, Licht. Verz. d. Doubl. p. 22; Max. Beit. iii. 552.
Pitylus atrochalybeus, Jard. et Selb. Ill. Orn. i. pl. 3.
Tanagra psittacina, Spix, Av. Bras. ii. p. 44, pl. 57, fig. 2.
Pitylus erythrorhynchus, Sw. Class. ii. p. 282.
Pitylus gnatho, Gray's Gen. ii. p. 362; Bp. Consp. p. 503.

Saltator psittacinus, Bp. Consp. p. 490; Gray's Gen. ii. p. 363.
Pitylus cærulescens, Cab. M. H. p. 143.
Sooty Grosbeak, Lath. G. H. v. p. 269.

Cærulescenti-niger, gutture et pectore antico intensioribus, nigris: rostro rubro. ♀ unicolor, magis fusca, neque cærulescens.
Long. tota 9·0, alæ 4·1, caudæ 4·3.
Hab. South-east Brazil, Rio di Janeiro (*Spix*); Bahia (*Max.*).
Mus. Brit., Paris., Derbiano.

b. *Periporphyrus.*

3. Pitylus erythromelas.

Loxia erythromelas, Gm. S. N. ii. 859.
Coccothraustes erythromelas, Vieill. N. D. d'H. N. xiii. 547; Enc. Meth. 1017; Gal. des Ois. i. p. 70, pl. 59.
Pitylus erythromelas, Gray, Gen. p. 362.
Periporphyrus erythromelas, Bp. Consp. p. 503.
Black-headed Grosbeak, Lath. G. H. v. 237, pl. 88.

Ruber, capite toto cum gutture nigris: rostro plumbeo. ♀ brunneo-flava capite (sicut maris) nigro.
Long. tota 7·6, alæ 4·0, caudæ 3·8.
Hab. Cayenne; Para (*Wallace*).
Mus. Brit., Paris., &c.

4. Pitylus celæno.

Fringilla celæno, Licht. Preis-Verz. d. S. u. V. no. 72 (1831).
Pitylus atro-purpuratus, Lafr. R. Z. 1838, p. 224 (♂); Gray's Gen. p. 362.
Pitylus atro-olivaceus, Lafr. R. Z. 1838, p. 224 (♀); Gray's Gen. p. 362.

Pyranga mexicana, Less. R. Z. 1839, p. 41; Gray's Gen. p. 364; Bp. Consp. p. 241.
Caryothraustes atro-olivaceus, Bp. Consp. p. 503.
Periporphyrus atro-purpuratus, Bp. Consp. p. 503.

Niger: torque cervicali postica cum lateribus pectoris et ventre rubris: tectricibus subalaribus roseis: rostro plumbeo. ♀ olivacea, subtus flavescentior; pileo toto et gutture nigris.
Long. tota 8·4, alæ 4·0, caudæ 3·5.
Hab. South Mexico, Papantla (*Deppe*).
Mus. Paris., Lugdunensi, Berolin.

c. *Caryothraustes.*

5. Pitylus viridis.

Coccothraustes canadensis, Briss. Orn. iii. 229.
Grosbec de Cayenne, Buff. Pl. Enl. 152, fig. 2 (fig. pess.).
Loxia canadensis, Linn. S. N. i. 304; Gm. i. 856; Lath. Ind. Orn. i. 379; Daud. ii. 373; Shaw's Zool. ix. 269.
Pitylus canadensis, Gray, Gen. p. 362; Schomb. iii. 667.

Coccothraustes viridis, Vieill. Enc. Meth. p. 1017.

Caryothraustes viridis, Cab. Mus. Hein. p. 144; Sclater, Tan. Cat. Sp. p. 3.

Caryothraustes cayanensis, Bp. Consp. p. 514 (*partim*).

Pitylus personatus, Less. Rev. Zool. 1839, p. 42; Descr. d. Mamm. et Ois. p. 344.

Canada Grosbeak, Lath. G. H. v. p. 382.

Supra flavo-olivaceus, pileo flavescentiore; subtus flavus: loris et gula tota nigris.

Long. tota 5·9, alæ 3·5, cauda 2·5.

Hab. Cayenne (*Buff.*); British Guiana (*Schomb.*).

Mus. Brit., Paris., &c.

6. PITYLUS BRASILIENSIS.

Fringilla viridis, Max. Beit. iii. 555.

Fringilla cayanensis, Licht. Verz. p. 22 (excl. Syn.).

Caryothraustes brasiliensis, Cab. Mus. Hein. p. 144.

Similis Pitylo viridi, *sed major, rostro fortiore et nigredine gulari magis extensa.*

Long. tota 6·8, alæ 3·7, caudæ 3·0.

Hab. South Brazil, prov. Bahia (*P. Max.*).

Mus. Berolin., &c.

7. PITYLUS POLIOGASTER.

Pitylus poliogaster, Dubus, Bull. Ac. Brux. xiv. pt. ii. p. 105 (1847); Rev. Zool. 1848, p. 245; Gray's Gen. App. p. 16.

Pitylus flavocinereus, Cassin, Pr. Ac. Phil. iv. p. 47 (1848).

Fringilla episcopus, Licht. in Mus. Berol.

Caryothraustes episcopus, Bp. Consp. p. 504.

Canada Grosbeak, var. A. Lath. G. H. v. p. 282?

Olivacescenti-flavus: tectricibus alarum dorso proximis, dorso postico et abdomine cinereis: loris et gula nigris.

Long. tota 7·0, alæ 3·7, caudæ 3·0.

Hab. Mexico, Cosamaluapan (*Deppe*); vic. of Cordova (*Sallé*); Guatimala (*Dubus*).

Mus. Berolin., Lugdunens., Philadelph. Academ. et Bruxell.

Genus II. ORCHESTICUS.

Orchesticus, Cab. Mus. Hein. p. 143 (1851).

Rostrum modicum, breve, altum, latum, tumidum; mandibulæ superioris marginibus non sinuatis, culmine incurvo; alæ modicæ, remigibus secunda, tertia, quarta et quinta longissimis: cauda subrotundata.

1. ORCHESTICUS ABEILLII.

Pyrrhula abeillei, Less. Rev. Zool. 1839, p. 40.

Tanagra occipitalis, Natt. in Mus. Berol.

Orchesticus occipitalis, Cab. Mus. Hein. p. 143.

Diucopis leucophæa, Bp. Consp. p. 491 (excl. syn.).
Schistochlamys abeillei, Sclater, Tan. Cat. Sp. p. 4.
Tangara roux, Less. Tr. d'Orn. p. 464.

Olivascenti-cinereus, pileo plumbescente, fronte, alis caudaque rufis: subtus dilutior, ochracescenti-rufus; lateribus obscurioribus: rostro plumbeo.

Long. tota 7·4, alæ 3·4, caudæ 3·5.
Hab. South Brazil, Bahia (*J. Verreaux*).
Mus. Paris., Brit., Berol., &c.

This curious bird has long been common in European collections, being often transmitted from Bahia. From its appearance one would suppose it to be a female, but M. Jules Verreaux (who has himself shot it in the island of Itaparica) informs me that the natives consider it a distinct species.

Lesson's description of his *Pyrrhula abeillei* "*corpore isabellino: occipite, dorso et cauda supra brunneo-isabellinis: infra fronte et collo lætè isabellinis: alarum pennis nigris extus rufis*," is, I think, sufficiently accurate to warrant us using his specific name for this bird.

2. ORCHESTICUS CAPISTRATUS.

Saltator ruficapillus, Vieill. Nouv. Dict. xiv. 108; Enc. Méth. p. 793; Puch. Arch. Mus. Paris. vii. 355?
Tanagra capistrata, P. Max. Reise n. Bras. ii. 500 (1821), et Beitr. iii. 500; Spix, Av. Bras. ii. p. 41, pl. 54, fig. 1.
Pitylus capistratus, Sw. Class ii. p. 282.
Tachyphonus? capistratus, Gray's Gen. p. 365.
Diucopis capistrata, Bp. Consp. p. 491.
Schistochlamys capistrata, Sclater, Tan. Cat. Sp. p. 4.
Tanagra leucophæa, Licht. Verz. d. Doubl. p. 32, 1823.
Schistochlamys leucophæa, Cab. Mus. Hein. p. 141.
"*Tanagra conspicillata*, Mus. Paris." Bp. Consp. p. 491.

Schistaceus, pileo brunnescentiore: rostri cærulescentis ambitu nigro: subtus pallide ochraceo-rufus, ventre medio albescente, lateribus schistaceis.

Long. tota 6·7, alæ 3·3, caudæ 3·0.
Hab. South-east Brazil, prov. Bahia, et Minas Geraes (*P. Max.*); Rio (*Spix*).
Mus. Brit., Paris., &c.

3. ORCHESTICUS ATER.

Tangara à cravatte noire de Cayenne, Buff. Pl. Enl. 714, fig. 2.
Tanagra atra, Gm. S. N. 898.
Saltator ater, Lafr. et d'Orb. Syn. Av. in Mag. de Zool. 1837, p. 36; Cab. in Schomb. Reis. iii. 677.
Nemosia atra, Bp. Consp. p. 236.
Diucopis atra, Bp. Consp. p. 492.
Schistochlamys atra, Cab. Mus. Hein. p. 141; Sclater, Tan. Cat. Sp. p. 4, et P. Z. S. 1855, p. 154.
Tanagra melanopis, Lath. Ind. Orn. i. p. 422; Max. Beitr. iii. 504.

Saltator melanopis, Vieill. Nouv. Dict. xiv. p. 103, et Enc. Méth. p. 790; d'Orb. Voy. p. 291; Tsch. F. P. p. 210.

Le Camail, Desm. Tan. pl. 42.

Black-faced Tanager, Lath. G. H. vi. p. 12.

Cinereo-griseus, subtus dilutior: pileo antico et capitis lateribus cum gutture toto juguloque nigris. Junior ex cinereo olivascens unicolor, nigredine vix perspicua.

Long. tota 6·2, alæ 3·3, caudæ 2·9.

Hab. British Guiana (*Schomb.*); Cayenne; Trinidad; New Grenada, Bogota; North-east Peru, wood-region (*Tsch.*); Bolivia, Moxos and Chiquitos (*d'Orb.*); Goyaz and Albuquerque, Rio Paraguay (*Cast.* et *Dev.*); South Brazil, prov. Rio and Espiritu S. (*P. Max.*).

Mus. Brit., Paris., &c.

Genus III. DIUCOPIS.

Diucopis, Bp. Consp. p. 491 (1850).

Schistochlamys, Reich. Av. Syst. Nat. pl. 77 (1850).

Rostrum subexiguum, rectum, conicum; alæ brevissimæ, remige primæ secundam subæquante, hac cum tertia, quarta et quinta æqualibus et longissimis: cauda modica, subquadrata.

1. DIUCOPIS FASCIATA.

Tanagra fasciata, Licht. Verz. d. Doubl. p. 32; Max. Beit. iii. 493; Bp. Consp. p. 238.

Tanagra axillaris, Spix, Av. Bras. ii. 41, pl. 54, fig. 2.

Tachyphonus axillaris, Gray, Gen. p. 365.

Diucopis fasciata, Bp. Consp. p. 491.

Schistochlamys fasciata, Sclater, Tan. Cat. Sp. p. 3.

Schistacea, subtus albescentior: loris, regione oculari et tectricibus alarum nigris: gutture et ventre toto cum fascia alari albis.

Long. tota 6·9, alæ 2·9, caudæ 2·6.

Hab. South-east Brazil, prov. San Paolo (*Licht.*); Minas and Bahia (*P. Max.*).

Mus. Brit., Paris., Derbiano.

This bird differs from the members of the genus *Orchesticus*, with which it has been lately associated, in the smaller straighter bill, very short wings, and more squared tail.

2. DIUCOPIS SPECULIGERA.

Schistochlamys speculigera, Gould, P. Z. S. 1855, p. 68, et Ann. N. H. xv. p. 345.

Nigra: speculo alarum, tectricibus subalaribus et macula sub nuchæ pennis obtecta cum corpore subtus albis: lateribus et dorso postico schistaceis.

Long. tota 6·7, alæ 3·1, caudæ 2·8.

Hab. East Peru, river Ucayali (*Hawxwell*).

Mus. Brit.

Mr. Gould's types are the only specimens I have seen of this peculiar bird. They were collected by Mr. Hawxwell in August 1852 upon the Ucayali, and are marked "*Irides red.*" I rather doubt this being the true place of this species, but at present I am unable to indicate a better one.

Genus IV. SALTATOR.

Saltator, Vieillot, Analyse, p. 32 (1816).

Rostrum forte, elongatum, incurvum, vix sinuatum sed apice dentata: alæ rotundatæ, remigibus tertia, quarta et quinta fere æqualibus et longissimis: cauda admodum longa et plerumque rotundata: ptilosis olivacea, schistacea, fulva, brunnea: sexus similes.

1. SALTATOR ATRICEPS.

Saltator atriceps, Less. Cent. Zool. pl. 69; Gray, Gen. p. 363; Bp. Consp. p. 489; Cab. M. H. p. 142.

Arremon giganteus, Bp. P. L. Z. 1837, p. 117; Gray, Gen. p. 361.

Pyrrhula raptor, Cabot, Boston Journ. v. p. 90.

Saltator raptor, Gray's Gen. App. p. 16; Bp. Notes s. l. coll. Delattre, p. 23.

Flavo-olivaceus: capite toto cum mento et vitta cervicem anticam cingente nigris: superciliis a fronte curtis et plaga gulari media albis: abdomine cinereo, crisso ochraceo-rufo.

Long. tota 9·5, alæ 4·7, caudæ 4·7.

Hab. South Mexico, Papantla (*Deppe*); vic. of Cordova (*Sallé*); Guatimala (*Bp.*); Escuintla (*Mus. Brit.*); Yucatan (*Cabot*).

Mus. Brit., Parisiensi, &c.

This is the largest and finest species of the genus. Prince Bonaparte (Notes Orn. s. l. coll. Delattre, p. 23) seems to consider Dr. Cabot's *Pyrrhula raptor* distinct, but Mr. Cassin, in his communication on Dr. Cabot's birds given in 'Jardine's Contributions,' 1852, p. 96, states it to be identical with the present bird, and the description given by Prince Bonaparte is applicable in every respect to this species.

2. SALTATOR MAGNOIDES.

Saltator magnoides, Lafr. R. Z. 1844, p. 41; Gray, Gen. App. p. 10; Bp. Consp. p. 489.

Saltator gigantodes, Cab. M. H. p. 143.

Supra olivaceus; capite cinereo, pileo viridi mixto: subtus schistaceus, mento albo, gutture et crisso ferrugineis: vitta lata gutturem undique cingente nigra.

Long. tota 7·5, alæ 4·0, caudæ 3·6.

Hab. Mexico (*Lafr.*); vic. of Cordova (*Sallé*); Coban (*Mus. Brit.*); Chiriqui (*Bridges*).

Mus. Brit. et Heineano.

The *S. magnoides* is very like the preceding species but much smaller in size, and with but slight supercilia. Besides, the chin is white and the throat brown like the *crissum*. I have seen the type of *S. gigantodes* in Herr Heine's museum, and consider it the same as *magnoides*.

3. SALTATOR MAGNUS.

Tangara des grands bois de Cayenne, Buff. Pl. Enl. 205 (fig. pess.).
Tanagra magna, Gm. S. N. p. 890; Lath. Ind. Orn. i. p. 422; Max. Beitr. iii. 525.
Le griverd de Cayenne, Buffl. Pl. Enl. 616 (fig. pess.)?
Coracias cayana, Bodd. Table d. Pl. Enl.
Coracias cayennensis, Gm. S. N. p. 381.
Saltator virescens, Vieill. Nouv. Dict. xiv. 104, et Enc. Méth. p. 790?
Saltator olivascens, Vieill. Nouv. Dict. xiv. 108; Enc. Méth. p. 794, et Gal. des Ois. p. 103, pl. 77; Tsch. F. P. p. 209.
Saltator cayennensis, d'Orb. Voy. p. 290.
Saltator magnus, Gray's Gen. p. 363; Bp. Consp. p. 489; Cab. Mus. Hein. p. 142.

Supra flavescenti-olivaceo-viridis, capitis lateribus cinereis, superciliis ante oculos curtis albis: subtus fulvescenti-cinereus: gula media alba, utrinque nigro-marginata, cervice antica crissoque pallide rufis: rostro nigro.

Long. tota 8·0, alæ 4·0, caudæ 3·7.

Hab. Cayenne (*Poiteau* in Mus. Paris.); British Guiana (*Schomb.*); Bogota (*Mus. Brit.*); East Peru, wood-region (*Tsch.*); Pintobamba (*Cast.* et *Dev.*); Bolivia, Yuracares (*d'Orb.*); Brazil, Rio (*P. Max.*).

Mus. Brit., Paris., &c.

This *Saltator* seems very widely distributed over the South American continent, and is in that respect different from the rest of its congeners. It may be at once distinguished by its uniform bright olive-green upper plumage (not of so yellowish a tint as in *Saltator atriceps*), and the brownish blotch on the foreneck: from *S. magnoides* it differs in the want of the black throat-band.

The Brazilian skins are of rather larger dimensions than the Cayenne birds, but do not otherwise differ.

4. SALTATOR ICTEROPYGIUS.

Saltator icteropyga, Dubus, Esq. Orn. pl. 13; Gray, Gen. App. p. 16.

Supra saturate cinerascenti-fuscus: superciliis, mento et gutture albis: pectore et epigastrio fulvescenti-cinereis: ventre dilute fulvo: hypochondriis cinereo-fulvis: crisso citrino: remigibus fuscis, extus cinereo limbatis: rectricibus supra nigris viridi-æneo submicantibus cinereoque extus limbatis: lateralibus quatuor utrinque macula magna alba in medio pogonii interni notatis: rostro corneo: pedibus fuscescentibus.

Hab. Mexico.

The Vicomte Dubus has given the above description of this curious *Saltator*, of which there is a specimen in his collection. Prince

Bonaparte, in his 'Conspectus,' states, on the authority of Baron de Lafresnaye, that it is merely the common *S. magnus* supplied with the tail of a *Ptilogonys*. But Dr. Hartlaub, who has lately inspected the bird, is quite convinced of its being a good and distinct species. (See Journ. f. Orn. 1854, p. 255.)

5. SALTATOR SIMILIS.

Tanagra superciliaris, Max. Beitr. iii. 518?

Saltator similis, Lafr. et d'Orb. Syn. Av. i. p. 36; d'Orb. Voy. p. 290, pl. 28, fig. 2; Gray, Gen. p. 363; Tsch. F. P. p. 209?; Bp. Consp. p. 489; Cab. Mus. Hein. p. 143.

Saltator gutturalis, Licht. in Mus. Berol.

Supra cinereus; interscapulio et alarum marginibus olivaceo-viridibus: superciliis longis albis: subtus albido-cinerascens, medialiter fulvo tinctus: gutture toto pure albo, utrinque nigro marginato: crisso rufescente: rostri inferioris basi alba.

Long. tota 9·0, alæ 4·0, caudæ 4·0.

Hab. South Brazil, Corrientes (*d'Orb.*); Peru, wood-region and coast (*Tsch.*).

Mus. Paris., Brit.

This bird is common among the collections of Brazilian skins so frequently imported of late years. Comparing it with *S. magnus*, we find the olive colour, which there pervades the entire upper surface, confined in the present species to the middle of the back and edgings of the wings, the rest of the upper plumage being cinereous. The throat too is pure white, and wants the rufous blotch on the fore-neck.

6. SALTATOR OLIVASCENS.

Saltator olivascens, Cab. in Schomb. Reise, iii. 676; Bp. Consp. p. 490; Cab. Mus. Hein. p. 142.

Saltator plumbeus, Bp. Notes Orn. p. 23.

Fusco-cinereus unicolor; superciliis ante oculos curtis et gutture albis, hoc utrinque nigro marginato: subtus albo-cinereus, pectore cinerascentiore; ventre medio albescentiore, inferiore cum crisso pallide rufescenti-ochraceis: rostro nigro.

Long. tota 8·0, alæ 3·75, caudæ 3·3.

Hab. British Guiana (*Schomb.*); Cayenne (*Mus. Paris.*); Venezuela, Cumana (*Mus. Eytoni*); S. Martha (*Bp.*); Trinidad (*Lord Harris*).

Mus. Bremensi; Eytoni; Berolin.; Heineano.

There is no trace of green colour on the plumage of this *Saltator*, the upper surface being uniform blackish-cinereous, as in *Saltator grandis*, to which it is very closely allied. But the latter bird may be distinguished by the blacker sides of the head and ear-coverts, and the greater breadth of the stripes on each side of the throat, which leave only a narrow longitudinal white band in the middle of it. And in the Central American bird the ochraceous colour of the crissum extends all over the abdomen more or less, while in the present species the middle of the belly is nearly white.

I have Prince Bonaparte's type of *S. plumbeus* in my possession, and consider it clearly the same as Dr. Cabanis' species.

7. SALTATOR GRANDIS.

Tanagra grandis, Licht. Preis-Verz. no. 67 (1831).
Saltator rufiventris, Vig. Beechey's Voy. Pac. p. 19?
Saltator vigorsi, Gray, Gen. p. 363?; Bp. Consp. p. 489; Cab. Mus. Hein. p. 143; Bp. Notes Orn. p. 23.
Saltator icterophrys, Lafr. Rev. Zool. 1844, p. 40; Gray's Gen. App. p. 16; Bp. Consp. p. 490 (juv.?)??
Saltator grandis, Licht. in Mus. Berol.
Saltator nigrigenis, Sclater, MS.

Supra nigrescenti-cinereus, lateribus capitis nigris: superciliis albis: gutturis stria mediali alba, utrinque late nigro marginata: abdomine cinereo fulvo tincto: ventre imo et crisso rufescentibus. Junior (S. ICTEROPHRYS, Lafr.?). *Supra olivaceo indutus, superciliis et campterio flavidis: ventre rufescentiore.*

Long. tota 7·75, alæ 4·0, caudæ 4·0.

Hab. South Mexico, Jalapa (*Mus. Berol.*); Orizaba (*Boteri*); vic. of Cordova (*Sallé*); Guatimala (*Constancia*).

I have already stated the characters which distinguish this species from the preceding, which is its representative in the more northern portions of the South American continent, while *S. azaræ* seems to take its place in Bolivia.

I am glad to be able to adopt Lichtenstein's name for the present bird, because I can only very doubtfully refer the other synonyms to this species, and in this state of uncertainty have occasionally applied to it the MS. name *nigrigenis*. But since I have seen the types of *S. grandis* at Berlin, and have ascertained that they are really the same as my *nigrigenis*, I have adopted Lichtenstein's name, which was published, although with rather insufficient specific characters, in 1831.

8. SALTATOR MUTUS.

Tanagra superciliaris, Spix, Av. Bras. ii. 44, pl. 57?
Saltator superciliaris, Cab. Mus. Hein. p. 142, *certe*.
Saltator cærulescens, Tsch. F. P. p. 209? (teste Cab.).
Tanagra muta, Licht. in Mus. Berol.

Supra nigricanti-cinereus unicolor; subtus albescenti-cinereus: superciliis ante oculos curtis et gutture medio albis, hoc nigro marginato: ventre medio albescentiore, crisso pallide rufescente: rostro nigro.

Long. tota 8·5, alæ 4·3, caudæ 4·0.

Hab. North Brazil, Lower Amazon, island of Mexiana (*Wallace*). *Mus.* Berol.

The description and figure given by Spix of his *S. superciliaris* are as applicable to this species as any other; but without examining the type (which I vainly sought for the last time I was at Munich), it is impossible to be sure of being right in using his name for the present bird, and I have therefore adopted for it Lichtenstein's term *mutus*, by which it is known in the Berlin museum. In fact, the names *superciliaris* and *cærulescens* have been applied to so many of this group of species, and the original descriptions upon which these terms rest are so indefinite, that it only produces further confusion to continue to employ them.

The *Saltator mutus* is rare in collections. Besides the example at Berlin I have only seen the specimens collected by Mr. Wallace in the neighbourhood of Para, from one of which my characters are taken. It is distinguished from all its allies by the uniform blackish-gray colouring of the plumage, the same below as above, only much lighter and more white, without any tinge of green, brown or rufous, except on the crissum. The supercilia only extend to the top of the eye. The bill is deep black and more elongated than in its congeners.

9. SALTATOR AZARÆ.

Saltator azaræ, d'Orb. Voy. p. 287: Bp. Consp. p. 490.

Supra nigricanti-cinereus, dorso virescente tincto: alis nigricantibus cinereo limbatis: superciliis curtis et gutture medio albis, hoc anguste nigro marginato: abdomine summo albescente, cinereo et ochraceo tincto, imo autem cinnamomescenti-ochraceo.

Long. tota 9·0, alæ 4·3, caudæ 4·3.

Hab. Bolivia, prov. Moxos and S. Cruz de la Sierra (*d'Orb.*).

Mus. Brit., Paris.

The closest allies of this bird are certainly *S. grandis* and *olivascens*, particularly the latter; but it is larger than either of them. From *S. olivascens* it may be also known by its cinereous back, having rather a greenish than a brownish tinge, and a deeper cinnamomeous colouring extending from the vent up to the middle of the belly, which in the *S. olivascens* is nearly white. From *S. grandis* it differs in its shorter bill and narrow throat-stripes, besides its superior size.

10. SALTATOR CÆRULESCENS.

Habia ceja blanca, Azara, Pax. i. p. 344.

Saltator cærulescens, Vieill. Nouv. Dict. xiv. 105, et Enc. Méth. p. 791; Hartl. Ind. Az. p. 6; d'Orb. Voy. p. 287.

"*Saltator superciliaris*, Spix," d'Orb. *ib.*

Fusco-brunneus, virescente paululum tinctus, alis extus olivaceo marginatis: subtus cinerascenti-albus: gutture medio albo, utrinque nigro marginato: ventre et crisso rufescente indutis, crisso saturatiore: superciliis a fronte ad nucham albis.

Hab. Paraguay (*Azara*); Corrientes in rep. Arg. (*d'Orb.*).

Mus. Parisiensi.

I have only seen one specimen of this species, which is in the Paris Museum, and was brought by d'Orbigny from Corrientes. It is certainly very closely allied to the Bolivian '*azaræ.*' But the bill is shorter and thicker, and there is a greenish colouring on the back and wings, of which there are no traces in the other bird, though I have some doubt whether this may not be due to the individual not being fully adult.

11. SALTATOR GULARIS.

Loxia gularis, Less. Tr. d'Orn. i. p. 448.
"*Saltator cærulescens*, Vieill.," Cab. Mus. Hein. p. 142.
Saltator superciliaris, Licht. in Mus. Berol.
Saltator gularis, Lafr. in Mus. suo.

Supra nigrescenti-plumbeus, superciliis longis a fronte ad imam cervicem albis: subtus fulvescens, gutture utrinque nigro marginato; pectore et cervicis lateribus cinerascentibus: ventre medio albescentiore: rostro brevissimo, crassissimo, nigro, apice uncinata: mandibula superiore juxta nares aurantia.

Long. tota 8·5, alæ 4·0, caudæ 4·0.
Hab. Monte Video (*Cab.*).

12. SALTATOR MAXILLOSUS.

Saltator maxillosus, Cab. Mus. Hein. p. 142 (note).

Similis S. gulari, *sed rostro adhuc majore, subtus minus ferrugineus, et alis olivaceo perfusis: a* S. muto *autem gula non alba sed sordide flavescenti-grisea et crisso clarius ferrugineo, necnon rostro forti dignoscendus.* (Cab. l. c.)

Hab. Monte Video (*Cab.*).
Mus. Berol.

I examined the type of this species when at Berlin, and was rather doubtful about its real distinctness from the preceding. I possess a specimen very much resembling it, as far as I can recollect and can gather from Cabanis' description. The bill of this example is not thicker than in one specimen of *S. gularis*, but is uniform black, and the back and wings are olive-green as in that in the Berlin Museum. But I think it is probable that this may be an immature stage of *S. gularis*.

13. SALTATOR RUFIVENTRIS.

Saltator rufiventris, Lafr. et d'Orb. Syn. Av. in Mag. de Zool. 1837, p.35; d'Orb. Voy. p.289, pl. 28, fig. 1; Gray's Gen. p. 363; Bp. Consp. p. 489.

Saturate plumbeus: superciliis elongatis albis: abdomine castaneo.

Long. tota 9·0, alæ 4·4, caudæ 4·0.
Hab. Bolivia (*d'Orb.* et *Bridges*).
Mus. Brit. et Paris.

M. d'Orbigny found this species very common in the environs of Enquisivi, in the province of Sicasica, and near Palca, in the province of Ayupaya in Bolivia. Mr. Bridges' specimens in the British Museum are also from Bolivia. It is a well-marked bird, and not likely to be confounded with any of its congeners.

14. SALTATOR AURANTIIROSTRIS.

Habia pico naranjado, Azara, Pax. i. p. 349.

Saltator aurantiorostris, Vieill. N. D. d'H. N. xiv. p. 103, et Enc. Méth. p. 789; d'Orb. et Lafr. Syn. Av. in Mag. de Zool. 1837, p. 35; d'Orb. Voy. p. 288; Gray, Gen. p. 363; Bp. Consp. p. 490.

Supra cinereus, pileo obscuriore: capitis lateribus, vitta subgutturali conjunctis, nigris: superciliis postice dilutatis et gutture albis: abdomine ochracescenti-albido: cauda nigra, rectricibus lateralibus albo terminatis: rostro aurantio.

Long. tota 8·5, alæ 4·0, caudæ 3·75.

Hab. Paraguay (*Azara*); Corrientes, La Plata (*d'Orb.*); Bolivia, Sicasica, Mizque, Valle-grande, Ayupaya, Cochabamba and La Paz (*d'Orb.*); Peru, Echarate (*Cast.* et *Dev.*).

Mus. Brit., Paris, &c.

This species, which may be always recognized by its bright orange bill, seems rather variable in some respects. There is a fine series of specimens of it in the Paris Museum, collected by d'Orbigny and Castelnau and Deville. In what seem to be the fully adults, the front sides of the head, throat and breast, are all deep black, a post-superciliary stripe and middle of the throat only being white. Others, which I suppose are immature, have the white space on the throat much larger, the black guttural band being confined to a mere ring, which in some specimens is hardly apparent.

15. SALTATOR ALBICOLLIS.

Saltator albicollis, Vieill. N. D. d'H. N. xiv. 107, et Enc. Méth. p. 793; Gray, Gen. p. 363; Bp. Consp. p. 489.

Fusco-olivaceus; subtus albo-subvirescens fusco maculatus: superciliis gulaque albidis. (Bp.)

I have examined the type-specimen at Paris upon which Vieillot founded this species, and from which Prince Bonaparte took the short characters above given. It seems to be an immature bird, and I think the locality, *Cayenne*, is most likely wrong. I suspect it was probably from Trinidad, in which island there is a *Saltator* belonging to this section with the flammulated under-plumage. Of this I possess an example which may be described as follows:—

"Above greenish-olive; head darker, uropygium more cinereous; small yellowish supercilia before the eye; wings bordered with bright olive-green; tail brown like the wing-feathers inside, rectrices edged basally with cinereous; under-surface white, regularly flammulated with olive-green, middle of the throat and belly nearly all white, just the shafts of the feathers only being olive; under wing-coverts white; bill black, with the apex yellow. Whole length 7·5; wing 3·5, tail 3·3."

There is a peculiar twist in the commissure in this bird which seems to agree with what Vieillot says of his *S. albicollis*; and I think it very probable that it is this Trinidad species that ought to bear that name.

But until an accurate comparison can be made between a series of individuals of each of the five members of this section of the genus, I think it almost hopeless to determine the species satisfactorily.

16. SALTATOR STRIATIPECTUS.

Saltator striatipectus, Lafr. R. Z. 1847, p. 73; Gray, Gen. App. p. 16; Bp. Consp. p. 489.

Supra olivaceus: uropygio caudaque cinereis: linea a naribus ad oculos, palpebrisque pallide sulphureis: subtus albus, pectore parum ochraceo tincto et striis fusco-olivaceis flammulato: gula, ventre et ano albis: gutturis albedine lateraliter vitta fusca marginata: rostro nigro-corneo, apice pallescente.

Long. tota 7·4.
Hab. Caly in New Grenada (*Lafr.*).
Mus. Lafresnayano.

17. SALTATOR MACULIPECTUS.

Saltator maculipectus, Lafr. R. Z. 1847, p. 73; Gray, Gen. App. p. 16; Bp. Consp. p. 489.

Supra fusco-griseus, dorso supremo parum olivaceo tincto: remigibus fuscis olivaceo marginatis: macula ante oculos, palpebrisque vix conspicue albescentibus: subtus albus; collo antico pectoreque maculis sordide griseis, quæ supra ventrem et hypochondria in strias angustas mutantur, variegatis.

Long. tota 6·8.
Hab. New Grenada (*Lafr.*).
Mus. Lafresnayano.

M. de Lafresnaye says of this species, that it differs from the preceding by its smaller size, grey and not olive tinge on the head and neck, belly white and not washed with olive, and beak shorter and yellow at the point.

18. SALTATOR GUADALUPENSIS.

Saltator guadalupensis, Lafr. R. Z. 1844, p. 167; Gray, Gen. App. p. 16; Bp. Consp. p. 489.

Supra olivaceus; uropygio caudaque sordide griseis; vitta superciliari angusta a naribus ad occiput ducta albido-virescente: subtus griseo-rufescens; hypochondriis griseo-obscurioribus; ano pallide rufescente; pectore et ventre flammulis obscurioribus parum conspicuis variegatis: gutture colloque antico albis, utrinque vitta nigra marginatis: rostro basali et medio brunneo-nigris, apicali albido-flavo.

Long. tota 7·9.
Hab. Island of Guadaloupe (*Ricord*).
Mus. Parisiensi.

19. SALTATOR MARTINICENSIS.

Saltator martinicensis, Bp. Consp. p. 489.

Similis S. guadalupensi, *sed rostro minus robusto* (!). (Bp.)
Hab. Island of Martinique.
Mus. Parisiensi.

There are six specimens of this *Saltator* from the island of Martinique in the museum of the Jardin des Plantes, presented by M. Alexander Rousseau in April 1842. I cannot see any specific difference between them and the Guadaloupe bird.

20. SALTATOR ORENOCENSIS.

Saltator orenocensis, Lafr. R. Z. 1846, p. 275; Gray, Gen. App. p. 16; Bp. Consp. p. 490; Cab. M. H. p. 143.

Saltator genalis, Licht. in Mus. Berol.

Supra griseo-plumbeus; alis caudaque nigris, remigibus primariis strictissime secondariis et tertiariis late cinereo terminatis: tectricibus omnibus ejusdem coloris: rectricibus supra basi et extus griseo quasi vittatis, infra grisescentibus: vitta lata superciliari, gutture, collo antico, maculaque parva ad mandibulæ basin niveis: genis cum capitis, colli et pectoris lateribus atris: subtus pallide ochraceus, hypochondriis et subcaudalibus ferrugineis: rostro nigro aut nigro-plumbeo: pedibus fuscis.

Long. tota 6·8.

Hab. Venezuela, Angostura (*Mus. Bremensi*); Trinidad (*Mus. H. E. S.*).

Mus. Berolinensi, Heineano.

21. SALTATOR ATRICOLLIS.

Habia gola negra, Azara, Pax. i. p. 348.

Saltator atricollis, Vieill. N. D. d'H. N. xiv. 104, et Enc. Méth. p. 790; Less. Descr. d. Mamm. et Ois. p. 344; d'Orb. Voy. p. 288; Gray's Gen. ii. p. 363; Bp. Consp. p. 490.

Tanagra atricollis, Spix, Av. Bras. ii. p. 43, pl. 56, fig. 2.

Habia robustona, Azara, Pax. i. p. 350.

Saltator validus, Vieill. N. D. d'H. N. xiv. 106; Lafr. et d'Orb. Syn. Av. in Mag. de Zool. 1837, p. 35.

Tanagra jugularis, Licht. Doubl. p. 31.

Fringilla jugularis, Max. Beitr. p. 558.

"*Loxia capsicum*, Val.," Less. Tr. d'Orn. i. 448.

Saltator sordidus, Less. Echo d. M. S. 1845, p. 295.

Fusco-rufescens: alis caudaque et pilei pennis subtus nigricantibus: capite laterali et gutture toto nigris: abdomine albo-rufescente, ventre saturatiore: rostro aurantio, culmine nigro.

Long. tota 8·0, alæ 3·75, caudæ 3·75.

Hab. Eastern Brazil, prov. Minas Geraes (*Spix*); San Paolo (*Licht.*); Rio; Bolivia, Chiquitos (*d'Orb.*); Paraguay (*Azara*).

Mus. Brit., Berol., Paris. &c.

Genus V. PSITTOSPIZA.

Psittospiza, Bp. Compt. Rend. xxxi. p. 424 (1850).

Chlorornis, Reichb. Av. S. N. pl. 77 (1850).

Rostrum rectiusculum, elongatum, culmine incurvo, gonyde ascendente, dente finali distinctissimo: alæ elongatæ, remigibus secunda, tertia et quarta longissimis: cauda quadrata: ptilosis nitide viridis.

1. PSITTOSPIZA RIEFFERI.

Tanagra riefferi, Boiss. R. Z. 1840, p. 4.
Saltator riefferi, Gray, Gen. p. 363, pl. 89; Tsch. F. P. p. 210.
Tanagra prasina, Less. Echo d. M. S. 1843, p. 947.
Psittospiza prasina, Bp. Consp. p. 492.
Chlorornis prasina, Cab. Mus. Hein. p. 141.
Saltator elegans, Tsch. Wiegm. Archiv, 1844, p. 288.

Lætissime viridis, lateribus capitis et gula summa cum ventre imo castaneis: rostro aurantio: pedibus flavis.

Long. tota 7·2, alæ 4·5, caudæ 3·5.

Hab. New Grenada, Bogota; Ecuador, forests of the Andes near Quito (*Jameson*); wood-region of East Peru (*Tsch.*).

Mus. Brit., Paris, &c.

Genus VI. LAMPROSPIZA.

Lamprospiza, Cab. Wiegm. Arch. 1847, p. 246.

Rostrum Saltatoris, *sed debilius: alæ elongatæ, remigibus quatuor primis fere æqualibus: cauda modica, quadrata.*

1. LAMPROSPIZA MELANOLEUCA.

Saltator melanoleucus, Vieill. Nouv. Dict. xiv. 105, et Enc. Méth. p. 791.
Divaricated Tanager, Lath. G. H. vi. p. 40.
Tanagra duplicata, Lath. in Mus. Derb.
Psaris habia, Less. Cent. Zool. p. 186, pl. 59.
Tityra habia, Gray, Gen. p. 253.
Lamprospiza habia, Cab. Wiegm. Arch. 1847, p. 246; Bp. Consp. p. 492.
Tangara double croissant, Less. Tr. d'Orn. p. 379.
Lamprospiza melanoleuca, Sclater, Tan. Cat. Sp. p. 4.

Supra æneo-niger; subtus albus; gutture toto et vitta utrinque a medio pectore ad latera transeunte cum tibiis et cauda tota nigris, dorso concoloribus: rostro rubro. ♀ dorso toto pallide cinereo.

Long. tota 6·0, alæ 3·6, caudæ 2·5.

Hab. Cayenne.

Mus. Brit., Paris., Derbiano.

Genus VII. CISSOPIS.

Cissopis, Vieill. Analyse, p. 40 (1816).
Bethylus, Cuv. Regn. An. (1817).

Rostrum altum, compressiusculum; culmine multum incurvo; dente finali indistincto: alæ modicæ, remigibus tertia, quarta et quinta longissimis: cauda longissima et multum rotundata, rectricibus gradatim crescentibus: ptilosis albo-nigra: sexus similes.

1. CISSOPIS LEVERIANA.

Magpie Shrike, Lath. Gen. Syn. i. p. 192.

Lanius leverianus, Gm. S. N. i. p. 302.

Lanius picatus, Lath. Ind. Orn. i. p. 73.

Corvus leverianus, Shaw, Mus. Lever. p. 241.

Le pie piegrieche, Le Vail. Ois. d'Afr. ii. p. 33. pl. 60.

Corvus collurio, Daud. Orn. ii. p. 246.

Cissopis leverianus, Gray, Gen. p. 362.

Bethylus leverianus, Bp. Consp. p. 491.

Albus, capite toto undique cum collo ad medium dorsum triangulariter descendente et pectore simili modo triangulariter terminante splendenti-violaceo-nigris: alis caudaque nigris: tectricibus alarum minoribus albis, majoribus autem et secondariis albo extus limbatis; rectricibus omnibus albo terminatis: rostro et pedibus nigris.

Long. tota 10·5, alæ 4·3, caudæ 6·0.

Hab. South East Brazil.

Mus. Brit., Paris., &c.

2. Cissopis media.

Cissopis bicolor, Vieill. N. D. d'H. N. xxvi. 417, et Enc. Méth. p. 750 (*partim*); Vieill. Gal. Ois. p. 226. pl. 140 ?

Cissopis minor, Cab. Schomb. Reis. iii. 677.

Bethylus medius, Bp. Consp. p. 491.

Cissopis media, Sclater, Tan. Cat. Sp. p. 5.

Medius: dorso dimidiato albo: rostro crasso incurvo. (Bp.)

Hab. British Guiana (*Schomb.*).

Mus. Paris.

The Guiana *Cissopis* is rather smaller than the common Brazilian species, and the steel-black colour does not extend so far down the back. The Paris Museum specimen of this bird seems to want the white wing-spots. I am not confident as to the correctness of separating this and the Brazilian bird.

3. Cissopis minor.

Saltator bicolor, Lafr. et d'Orb. Syn. Av. in Mag. de Zool. 1837, p. 36 ?

Bethylus picatus, d'Orb. Voy. p. 269 ?; Tsch. Wiegm. Archiv, 1844, p. 288.

Cissopis minor, Tsch. Faun. Per., p. 211.

Minor: dorso omnino albo: rostro minus valido, brevi, rectiusculo.

Long. tota 9·5, alæ 4·2, caudæ 5·2.

Hab. Bolivia, Yuracares (*d'Orb.*); Eastern wood-region of Peru (*Tsch.*); New Grenada, Bogota.

Mus. Brit., Paris.

The Bogota *Cissopis* seems distinct from the Brazilian, having merely the upper neck steel-black, and the back all white. I am not quite certain whether d'Orbigny's Bolivian examples are best referable here. They seem to come pretty near the Cayenne bird.

Genus VIII. OREOTHRAUPIS.

Rostrum validum, tomiis mandibulæ superioris medio turgidis et mandibulam inferiorem tegentibus, sicut in genere Lanione, *sed brevius, altius, latius et medio minus uncinatum: alæ breves, rotundatæ: cauda sicut in genere* Arremone.

1. OREOTHRAUPIS ARREMONOPS.

Saltator arremonops, Jard. Edinb. N. Phil. Journ. 1855, ii. p. 119; Sclater, P. Z. S. 1855, p. 84. pl. xcii.

Rufo-brunneus, olivaceo parum tinctus; pectore multo clariore et rubescentiore: capite toto mentoque nigris; vitta mediali verticis et superciliari utrinque postice elongatis cum medio ventre cinereis: alis intus et cauda nigricantibus: rostro et pedibus nigris.

Long. tota 7·25, alæ 3·2, caudæ 3·5.

Hab. Andes in the vicinity of Quito (*Jameson*).

Mus. Gul. Jardine, Baronetti.

This peculiar Tanager in style of plumage and general habit corresponds most closely with the members of the genus *Arremon*, but the bill is altogether abnormal, the upper mandible swelling in the middle and overlapping the under, as in the genus *Lanio*, though not developed into a decided hook: but it is much shorter, broader and deeper than in the last-named genus, and has more general resemblance to that of some of the *Saltatores*.

Genus IX. ARREMON.

Arremon, Vieill. Analyse (1816), p. 32.

Rostrum rectum, altum, breve, conicum, apice vix dentata: alæ breves, remigibus quarta, quinta et sexta longissimis: cauda breviuscula, rotundata.

1. ARREMON SILENS.

Le Tangara de la Guyane, Buff. Pl. Enl. 742.

Tanagra silens, Bodd. Table de Pl. Enl.; Lath. Ind. Orn. p. 432; Max. Beit. iii. 507.

Arremon torquatus, Enc. Méth. p. 794, et Vieill. Gal. Ois. p. 105. pl. 78.

Arremon silens, Gray, Gen. p. 361; Bp. Consp. p. 487.

L'oiseau silentieux, Desm. Tan. t. 38, 39, 40.

Silent Tanager, Lath. G. H. vi. p. 22.

Olivaceus: capite et vitta pectorali nigris: tænia verticali cinerea: superciliis a fronte ad nucham, cum gutture albis: abdomine albido, lateribus cinerascentibus: campterio flavo: rostro nigro. ♀ Supra mari similis: subtus fulvo tincta nec cinerascens: torque gutturali vix apparente.

Long. tota 5·0, alæ 2·8, caudæ 2·4.

Hab. Cayenne; North Brazil, Capin river (*Wallace*); South East Brazil (*P. Max.*).

Mus. Brit., Paris., &c.

The Brazilian specimens of this bird are slightly larger in size than those from Cayenne, and of rather a more yellowish green on the back. This species may be distinguished from all its nearest allies by its black bill.

2. Arremon d'orbignii, sp. nov.

Embernagra silens, Lafr. et d'Orb. Syn. Av. in Mag. de Zool. 1837, p. 34 (*partim*).

Arremon silens, d'Orb. Voy. p. 281 (*partim*).

Supra olivascens: tænia verticali cinerea: superciliis a fronte incipientibus cum corpore subtus albis; hoc nigro torquato: rostro flavo; mandibulæ superioris parte culminali nigra.

Hab. Bolivia, prov. Yungas (*d'Orb.*).

Mus. Parisiensi.

This Bolivian species comes nearest to *A. flavirostris*, but there is more black on the upper mandible, and the superciliary stripes begin from the front, as in *A. silens*.

3. Arremon flavirostris.

Tordo de bosque torqüato, Azara, i. p. 331 ?

Arremon silens, Hartl. Ind. Az. p. 5 ?

Arremon flavirostris, Sw. An. in Men. p. 347; Gray, Gen. p. 361; Bp. Consp. p. 487.

Supra olivascens: tænia verticali cinerea: superciliis ab oculo incipientibus et corpore subtus albis; hoc nigro torquato: lateribus cinerascentibus: rostro flavo: ipso culmine tantum nigro.

Hab. Brazil, Cametá (*Mus. Berol.*).

Mus. Berol., Derbiano.

4. Arremon devillii, sp. nov.

Arremon devillii, Bp. in Mus. Paris.

A. schistaceus, olivaceo paululum tinctus: tænia verticali dorso concolore: superciliis ab oculo incipientibus et corpore subtus albis, hoc nigro torquato: tectricibus alarum superioribus olivaceis: rostro superiore nigro, inferiore flavo.

Long. tota 6·0, alæ 2·2, caudæ 2·1.

Hab. prov. Goyaz in Brazil (*Cast.* et *Dev.*).

Mus. Parisiensi.

This bird is intermediate between *A. flavirostris* and *A. polionotus*. Unlike the latter, it has the whole upper mandible black and the back tinged with olive, and is besides of smaller size, and possesses a vertical band. From the former it appears distinguishable by its differently coloured bill and less olivaceous back.

5. Arremon polionotus.

Arremon polionotus, Bp. Consp. p. 488

Supra plumbeus: capite et torque angusta pectorali nigris: superciliis postocularibus et corpore subtus albis; lateribus cinerascen-

tibus: tectricibus alarum olivaceis, ipsa flexura flava: rostro albo, mandibulæ superioris culmine nigro.

Long. tota 6·0, alæ 2·9, caudæ 2·7.

Hab. Corrientes, La Plata (*Bp.*); Brazil, Cuyaba (*Natt.*).

Mus. Paris. et Vindob.

This species may be distinguished from the *A. silens* by its cinereous back, narrower throat-band and differently coloured bill.

6. ARREMON ABEILLII.

Arremon abeillei, Less. R. Z. 1844, p. 435; Gray, Gen. App. p. 16.

Schistaceus; capite toto et torque gutturali nigris: superciliis et corpore subtus albis: rostro nigro; pedibus luteis.

Hab. Guyaquil (*Less.*).

Mus. Baronis de Lafresnaye et Princ. Car. Bonaparte.

I have seen specimens of this species in the collections of the Baron de la Fresnaye and Prince Charles Bonaparte. It appears very like the preceding, but has the bill black.

7. ARREMON SEMITORQUATUS.

Arremon semitorquatus, Sw. An. in Men. p. 257; Gray, Gen. p. 361; Bp. Consp. p. 488.

Supra olivaceus: capite et plaga utrinque cervicali (quasi semitorquem formante) nigris: vitta mediali verticis et cervice postica cum lateribus corporis et crisso cinereis: superciliis elongatis, gutture et abdomine medio albis: tectricibus alarum dorso concoloribus: mandibula superiore nigra, inferiore flava.

Long. tota 6·0, alæ 2·9, caudæ 2·9.

Hab. South Brazil.

Mus. Brit., &c.

8. ARREMON AXILLARIS.

Arremon axillaris, Sclater, P. Z. S. 1854, p. 97, et Tan. Cat. Sp. p. 15.

Supra olivaceo-viridis; capite atro; superciliis productis albis; vitta verticali et cervice postica cinereis: subtus niveus, lateribus cinerascentibus; plaga utrinque cervicali (vittam quasi imperfectam formante) mentoque summo atris; remigibus rectricibusque nigricantibus: tectricibus alarum majoribus flavo-olivaceis, minoribus et campterio læte flavis: mandibula superiore nigra, inferiore flava: pedibus clare brunneis.

Long. tota 3·8, alæ 2·2, caudæ 1·4.

Hab. New Grenadian Andes, Bogota.

Mus. Brit. et Paris.

This species very much resembles *A. semitorquatus*, but has the bend of the wing bright yellow, instead of olive-green. I have only seen it in collections from Bogota.

9. ARREMON SPECTABILIS.

Arremon spectabilis, Sclater, P. Z. S. 1854, p. 114. pl. 67.

Supra aurescenti-olivaceus; capite nigro, vitta verticali cinerea: superciliis albis: axillis lætissime croceis: subtus albus; mento summo et torque gutturali nigris, lateribus cinerascentibus: rostro flavo.

Long. tota 5·8, alæ 2·8, caudæ 2·5.

Hab. Province of Quixos in Cisandean Ecuador.

Mus. Britannico; Gul. Jardine.

This beautiful species is from the Upper Rio Napo, where it traverses the province of Quixos on the eastern slope of the great Andean range. Specimens in Sir William Jardine's collection are labelled as having been prepared by M. Villavicencio, a Spanish naturalist resident in that locality.

10. ARREMON ERYTHRORHYNCHUS.

Arremon erythrorhynchus, Sclater, P. Z. S. 1855, p. 83. pl. 89.

Olivaceus; capite nigro; vitta mediali verticis, nucha cervicisque lateribus cinereis: superciliis et corpore subtus albis: torque gutturali angusta nigra: lateribus cinerascentibus: campterio flavo: pedibus albis: rostro elongatiore, incurviore, rubro.

Long. tota 5·8, alæ 3·0, caudæ 2·7.

Hab. New Grenadian Andes, Bogota.

Mus. Brit.

This *Arremon*, of which I have only yet seen one example—a Bogota skin, formerly in Mr. Gould's collection—may be distinguished from the preceding species by its more lengthened, incurved and brilliant orange-red bill, and the yellow bend of the wing.

11. ARREMON AURANTIIROSTRIS.

Arremon aurantiirostris, Lafr. R. Z. 1847, p. 72; Des Murs, Icon. Orn. pl. 55; Gray, Gen. App. p. 16; Bp. Consp. p. 488.

Brunnescenti-olivaceus; capite et vitta lata pectorali nigris: vitta mediali verticis dorso concolore: superciliis elongatis cum gutture toto et ventre medio albis: campterio flavo: rostro albescenti-aurantio.

Long. tota 6·5, alæ 2·9, caudæ 2·5.

Hab. Isthmus of Panama (*Delattre*).

Mus. Brit.; Derbiano; Acad. Philadelph.

This bird may be distinguished from its congeners by the broadness of the pectoral band, and its large wholly yellow bill.

12. ARREMON SCHLEGELI.

Arremon schlegeli, Lafr. M. S.; Bp. Consp. p. 488.

Supra cinereus, dorso et tectricibus alarum superioribus flavescenti-olivascentibus: capite toto et plaga utrinque gutturali (quasi semitorquem formante) nigris: carpo flavo: subtus albus, lateraliter cinerascens: rostro flavo, culmine vix nigro.

Long. tota 5·7, alæ 2·8, caudæ 2·3.

Hab. Littoral of New Grenada, S. Martha (*Verreaux*); Cartagena and Caraccas (Mus. Paris).

Mus. Brit., Paris., Lugdunensi.

This fine *Arremon* is at once recognizable by its black head, which is without the usual supercilia or medial band.

Genus X. PHŒNICOPHILUS.

Phœnicophilus, Strickl. Cont. Orn. 1851, p. 104.

Rostrum Buarremonis, *sed elongatius · alæ elongatæ, remigibus tertia, quarta et quinta longissimis : cauda breviuscula, quadrata, rectricibus inter se æqualibus.*

1. PHŒNICOPHILUS PALMARUM.

Le palmiste, Briss. Orn. ii. p. 301. (♀.)
Le palmiste à tête noire, Briss. Orn. ii. p. 303. (♂).
Turdus palmarum, Linn. S. N. i. 295; Vieill. Ois. de l'Am. Mér. ii. p. 16. pl. 69 ♂ 70 ♀.
Le palmiste de Cayenne, Buff. Pl. Enl. 539. fig. 1.
Tachyphonus palmarum, Vieill. N. D. d'H. N. xxxii. 359, et Enc. Méth. p. 803.
Arremon palmarum, Gray, Gen. Suppl. p. 16.
Phœnicophilus palmarum, Strickl. Cont. Orn. 1851, p. 104.
Dulus palmarum, Bp. R. Z. 1851, p. 78, et Note s. l. Tang. p. 29.
Dulus poliocephalus, Bp. R. et M. de Zool. 1851, p. 78, et Note s. l. Tang. p. 29. (♀.)
Phœnicophilus poliocephalus, Strickl. Cont. Orn. 1851, p. 104 (♀).

♂ *flavescenti-olivaceus : cervice postica et corpore subtus cinereis : gutture toto et abdomine medio albis : pileo nigerrimo ; maculis utrinque, alia in fronte, alia supra oculum et alia sub oculo, niveis : rostro nigro.* ♀. *pileo plumbeo ; gutture fere omnino cinereo.*

Long. tota 7·5, alæ 3·7, caudæ 3·0.
Hab. Island of S. Domingo.
Mus. Brit., Paris.

Genus XI. BUARREMON.

Buarremon, Bp. Consp. p. 483.
Chrysopoga, Bp. Consp. p. 480.
Pipilopsis, Bp. Consp. p. 485.

Rostrum rectum, plus minusve elongatum, conicum; apice vix dentata : alæ longiores, remigibus quarta, quinta et sexta longissimis : cauda elongata et multum rotundata : ptilosis olivascens : sexus similes.

a. Buarremon.

1. BUARREMON TORQUATUS.

Embernagra torquata, Lafr. et d'Orb. Syn. Av. in Mag. de Zool. 1837, p. 34.
Arremon affinis, d'Orb. Voy. p. 282.
Buarremon torquata, Bp. Consp. p. 483.

Clare olivascens: capite nigro, tænia verticali et cervicis lateribus cinereis : superciliis ab oculo incipientibus et corpore subtus albis :

pectore nigro torquato: lateribus et crisso viridescenti-olivaceis; cauda cinerea, viridescenti-olivaceo limbata: rostro nigro: pedibus clare brunneis.

Long. tota 7·0, alæ 3·1, caudæ 2·9.

Hab. Bolivia, prov. Yungas (*d'Orb.*).

Mus. Parisiensi.

This bird is very like the *B. assimilis* so common in Bogota collections, but distinguishable by its black collar and white supercilia.

2. BUARREMON PHÆOPLEURUS, sp. nov.

Clare olivascens: capite nigro, tænia verticali et lateribus cervicis cinereis: superciliis a fronte incipientibus et corpore subtus albis: hoc nigro torquato: ventris lateribus et crisso brunnescentibus: cauda brunnea, olivaceo tincta: rostro nigro: pedibus clare brunneis.

Long. tota 7·2, alæ 3·2, caudæ 2·8.

Hab. Venezuela, Caraccas (*Levraud*).

Mus. Paris.

I have had a specimen of this bird in my possession for some time, but only lately discovered its distinctness from the preceding species, on comparing them together at the Jardin des Plantes. The Venezuelan form may be distinguished by the brown colour on the flanks and crissum, the brownish olive tail, and the commencement of the supercilia from the front. The examples of this *Buarremon* at Paris were sent to the Museum from Caraccas by M. Levraud.

3. BUARREMON ASSIMILIS.

Tanagra assimilis, Boiss. Rev. Zool. 1840, p. 67.

Arremon assimilis, Gray, Gen. p. 361.

Buarremon assimilis, Bp. Consp. p. 484.

Olivaceus; pileo nigro: capitis vittis tribus cum cervice postica et laterali cinereis: subtus albus, lateribus et ventre imo crissoque cinerascenti-olivaceis: rostro nigro: pedibus brunneis.

Long. tota 7·0, alæ 3·3, caudæ 3·3.

Hab. Bogota; Western declivity of Andes near Quito (*Jameson*).

Mus. Paris., Brit.

4. BUARREMON VIRENTICEPS.

Fringilla quadrivittata, Licht. in Mus. Berol.

Buarremon virenticeps, Bp. Compt. Rend. Oct. 22, 1855.

Similis Buarremoni assimili *sed capitis striis et cervice tota olivascentibus, dorso concoloribus: rostro nigro: subtus magis cinereus.*

Hab. Mexico.

Mus. Berol.

5. BUARREMON BRUNNEINUCHUS.

Embernagra brunneinucha, Lafr. R. Z. 1839, p. 97; Boiss. R. Z. 1840, p. 68; Gray, Gen. p. 361.

Arremon frontalis, Tsch. Wiegm. Arch. 1844, p. 239 et F. P. p. 213.
Buarremon brunneinucha, Bp. Consp. p. 484.
Buarremon xanthogenys, Cab. Mus. Hein. p. 141.

Olivaceus: alis caudaque brunnescentioribus: pileo postico et nucha castaneis, striga utrinque cinnamomea: fronte et lateribus capitis nigris, illa albo trimaculata: subtus albus, nigro torquatus: lateribus et ventre imo cinereis, olivaceo indutis: rostro nigro.

Long. tota 7·0, alæ 3·2, caudæ 3·2.

Hab. Mexico (*Lafr.*); Guatimala; Bogota; East Peru (*Tsch.*); Venezuela, Caraccas.

Mus. Brit., Paris.

I have seen the type of *B. xanthogenys* in Herr Heine's beautiful collection of birds at Halberstadt. I think it is only an accidental variety of the *B. brunneinuchus*, because other examples from the same locality—Caraccas—seem perfectly identical with New Grenadian specimens.

b. *Chrysopoga.*

6. BUARREMON CHRYSOPOGON.

Zonotrichia ? aureigula, Bp. M. S.
Atlapetes chrysopogon, Bp. in Mus. Paris.
Chrysopoga typica, Bp. Consp. p. 480.

Brunnescenti-griseus, subtus dilutior, ventre medio cinereo-albescentiore: capite nigro, vitta mediali alba: gutture flavo: rostro nigro, pedibus brunneis.

Hab. California ?

Mus. Parisiensi.

This bird, of which I have only seen the specimen in the Paris Museum, resembles the better known *C. albinuchus*, but has only the throat, and not the whole under-surface, yellow.

7. BUARREMON ALBINUCHUS.

Embernagra albinucha, d'Orb. et Lafr. R. Z. 1838, p. 165; Gray, Gen. p. 361.
Buarremon albinucha, Bp. Consp. p. 484.
Atlapetes albinucha, Cab. M. H. p. 140.
Embernagra mexicana, Less. R. Z. 1849, p. 42 ?

Supra cinerascenti-olivaceus; capite nigro, vitta mediali alba: subtus flava, lateribus et crisso olivascentibus: rostro nigro.

Long. tota 6·5, alæ 3·0, caudæ 3·2.

Hab. Cartagena (*Candé*).

Mus. Paris.

8. BUARREMON GUTTURALIS.

Arremon gutturalis, Lafr. R. Z. 1842, p. 97; Gray, Gen. p. 361.
Buarremon gutturalis, Bp. Consp. p. 484.

Olivascenti-fuscus: capite nigro, vitta mediali flavescenti-alba: subtus grisescenti-alba, gutture flavo: rostro nigro.

Long. tota 6·5, alæ 3·1, caudæ 3·4.

Hab. New Grenada, Bogota.

Mus. Lafresnayano.

c. Carenochrous.

9. BUARREMON LATINUCHUS.

Arremon rufinucha, Tsch. Consp. Av. in Wiegm. Arch. 1844, p. 289; Tsch. F. P. p. 212?

Buarremon latinuchus, Du Bus, Bull. Ac. Brux. xxii. p. 154.

Schistaceus: pileo toto et cervice postica castaneis: lateribus capitis nigris: subtus flavus, lateribus et crisso cinerascentibus.

Long. tota 6·5, alæ 3·1, caudæ 3·3.

Hab. Vicinity of Quito (*Jameson*); Eastern wood-region of Peru (*Tsch.*).

Mus. Jard.

M. DuBus considers this bird, which has been generally considered as the same as the Bolivian *rufinuchus,* distinct from that species. The principal difference apparent from d'Orbigny's figure seems to be the want of the lateral gular stripes, but I have seen indications of these in some Quitian specimens.

10. BUARREMON RUFINUCHUS.

Embernagra rufinucha, Lafr. et d'Orb. Syn. Av. in Mag. de Zool. 1839, p. 35; *Arremon rufinucha,* d'Orb. Voy. p. 283. pl. 27. fig. 2; Gray, Gen. p. 361; *Buarremon rufinucha,* Bp. Consp. p. 484 (*partim*).

Supra nigra; subtus flava, lateribus et crisso olivascentibus: macula ante oculos sulfurascente: pileo et nucha cinnomomeo-rufis: lateribus capitis et vitta angusta utrinque ad latera gutturis nigris: rostro nigro.

Long. tota 6·3, alæ 3·0, caudæ 3·0 (*d'Orb.*).

Hab. Bolivia, (*d'Orb.* et *Bridges*).

Mus. Brit., Parisiensi.

11. BUARREMON LEUCOPTERUS.

Arremon leucopterus, Jard. Edinb. N. Phil. Journ. n. s. iii. p. 92.

Buarremon leucopterus, Sclater, P. Z. S. 1855, p. 214, pl. 109.

Schistacescenti-niger, alis caudaque obscurioribus: capitis lateribus nigris: pileo ochraceo-rufo: macula utrinque ante-oculari et speculo alari cum corpore toto subtus albis, lateribus in cinereum trahentibus: tectricibus alarum inferioribus albis: rostro pedibusque nigris.

Long. tota 6·2, alæ 2·8, caudæ 2·7.

Hab. Western slope of the Andes near Quito (*Jameson*).

Mus. Gul. Jardine, Baronetti.

12. BUARREMON PALLIDINUCHUS.

Arremon pallidinucha, Boiss. R. Z. 1840, p. 69; Gray, Gen. p. 361; Bp. Consp. p. 484; Less. Descr. d. Mamm. et Ois. p. 351.

Buarremon pallidinucha, Bp. Consp. p. 484.

Atlapetes pallidinucha, Cab. Mus. Hein. p. 140.

Olivascenti-fuscus, alis caudaque nigricantibus: capite nigro: vitta lata a fronte ad nucham antice latiore cinnamomea, postice angustiore albescente: subtus flavus, lateribus et crisso olivascentibus.

Long. 6·3, alæ 3·2, caudæ 3·1.

Hab. Bogota.

Mus. Brit.

13. BUARREMON ALBIFRENATUS.

Arremon albifrenatus, Boiss. R. Z. 1840, p. 68; Gray, Gen. p. 361.

Buarremon albifrenatus, Bp. Consp. p. 484.

Arremon mystacalis, Sclater, R. et Mag. de Zool. 1852, p. 8; Cont. Orn. 1852, pl. 99, p. 131.

Olivaceus: pileo castaneo: fronte et lateribus capitis nigris: subtus flavus: gutture et mystace utrinque ab hoc linea nigra divisa albis: rostro nigro: pedibus rubellis.

Long. tota 6·3, alæ 3·0, caudæ 3·0.

Hab. Bogota.

Mus. Paris., Brit.

14. BUARREMON SCHISTACEUS.

Tanagra (Arremon) schistaceus, Boiss. R. Z. 1840, p. 69.

Arremon schistaceus, Gray, Gen. p. 361.

Buarremon schistaceus, Bp. Consp. p. 484.

Atlapetes schistaceus, Cab. M. H. p. 140.

Nigricanti-schistaceus, subtus pallidior, albescentior; alis caudaque nigris, speculo alari albo: pileo intense castaneo: gutture albido; capitis lateribus et stria utrinque gutturali nigris.

Long. tota 6·5, alæ 3·0, caudæ 3·1.

Hab. Bogota.

Mus. Brit.

d. Pipilopsis.

15. BUARREMON SEMIRUFUS.

Tanagra (Arremon) semirufus, Boiss. R. Z. 1840, p. 69.

Arremon semirufus, Gray, Gen. p. 361.

Pipilopsis semirufus, Bp. Consp. p. 485; Cab. M. H. p. 139.

Olivaceus; capite et collo undique toto cum pectore cinnamomeis: abdomine flavo: lateribus olivascentibus: rostro plumbeo: pedibus rubellis.

Long. tota 6·5, alæ 3·0, caudæ 3·2.

Hab. Bogota; Cumana (*Dyson*).

Mus. Brit., Paris.

16. BUARREMON FULVICEPS.

Emberiza fulviceps, Lafr. et d'Orb. Syn. Av. in Mag. de Zool. 1837, p. 77; d'Orb. Voy. p. 362. pl. 46. fig. 2.

Pipilopsis fulviceps, Bp. Consp. p. 485; Cab. Mus. Hein. p. 138.

Olivaceo-viridis : capite et stria laterali gutturis castaneis : macula utrinque ante-oculari et corpore subtus ad medium ventrem flavis : lateribus olivaceo-viridibus.

Hab. Bolivia, prov. Mizque (*d'Orb.*).

Mus. Parisiensi.

This bird very closely resembles the *B. semirufus* in colour, but has the lores, middle of the throat, rictal striæ and breast yellow, the chestnut occupying the sides of the throat and dividing it from the striæ. The bill is rather more finch-like than in the former species.

17. BUARREMON PERSONATUS.

Arremon personatus, Cab. in Schomb. Reise, iii. 678.

Pipilopsis personatus, Bp. Consp. p. 485.

Pyrrhocoma personata, Cab. M. H. p. 138.

Fusco-cinereus : dorso subolivascente : subtus flavus : pileo, gula collique lateribus rufis.

Hab. British Guiana, Roraima Mountains (*Schomb.*).

Mus. Berolinensi.

Genus XII. CHLOROSPINGUS.

Chlorospingus, Cab. Mus. Hein. p. 139.

Hemispingus, Cab. l. c.

Rostrum Buarremonis *sed tenuius, debilius, dente finali pæne obsoleto : alæ longiusculæ, remigibus tertia, quarta et quinta æqualibus : cauda elongata et rotundata ; ptilosis olivacea et schistacea : sexus similes.*

This group forms a series, the first members of which are closely allied to the *Buarremones*, and have the bill nearly as strong, and of the same form as in that genus. But they grow gradually more tenuirostral, and ultimately show striking affinities towards *Trichas* and other forms of the *Mniotiltinæ*, with which they might at first sight be easily confounded.

a. *Chlorospingus.*

1. CHLOROSPINGUS OPHTHALMICUS.

Arremon ophthalmicus, Du Bus, Bull. Ac. Brux. xiv. pt. 2. p. 107 (1847) ; R. Z. 1848, p. 247 ; Gray's Gen. iii. Supp. p. 16.

Chlorospingus leucophrys, Cab. Mus. Hein. p. 139.

Pipilopsis albitemporalis, Bp. Consp. p. 485 (*partim*).

Supra brunnescenti-olivaceus, pileo et lateribus capitis obscure nigricanti-brunneis : palpebris et macula postoculari albis : loris, gula et abdomine medio albis : pectore, hypochondriis et crisso flavescenti-olivaceis.

Long. tota 5·25, alæ 2·75, caudæ 2·25.

Hab. Mexico, vic. of Jalapa (*Cab.*) ; Cordova (*Sallé*).

Mus. Bruxell., Berolin., H. E. Strickland.

2. CHLOROSPINGUS ALBITEMPORALIS.

Tachyphonus albitemporalis, Lafr. R. Z. 1848, p. 12 ; Gray, Gen. Supp. p. 17 ; Bp. Consp. p. 237.

Chlorospingus ophthalmicus, Cab. Mus. Hein. p. 139 (note).
Chlorospingus albitemporalis, Sclater, P. Z. S. 1855, p. 155 ; List of Bog. B. p. 27.

Supra læte olivaceus : pileo et lateribus capitis nigricanti-brunneis : loris subobsolete fulvescentibus : pennulis oculum postice tangentibus albis : gutture pallide fulvescenti-albido, striis minutis nigris asperso : pectore aureo, fulvo tincto : abdomine medio pure albo ; lateribus et crisso viridescenti-flavis.

Long. tota 5·2, alæ 2·75, caudæ 2·25.
Hab. Bogota (*Lafr.*) ; Venezuela (*Levraud*) ; Bolivia (*Bridges.*).
Mus. Britannico.

This South American species may be distinguished from the Mexican *C. ophthalmicus* by its rather brighter olive colour above, its lores and throat tinged with fulvous-brown (in the other bird these parts are nearly pure white), and the fulvous-yellow breast, which in *C. ophthalmicus* is greenish yellow like the sides.

3. CHLOROSPINGUS FLAVIPECTUS.

Arremon flavipectus, Lafr. R. Z. 1840, p. 227 ; Gray, Gen. p. 361.
Tachyphonus flavipectus, Lafr. R. Z. 1848, p. 11 ; Bp. Consp. p. 237.
Pipilopsis flavipectus, Bp. Consp. p. 485.
Chlorospingus flavipectus, Cab. Mus. Hein. p. 139.

Olivaceus ; pileo et cervice postica nigrescenti-cinereis, lateribus capitis saturatioribus, loris pallidioribus : gula albida, fulvescente tincta : abdomine viridescenti-flavo ; ventre medio albo.

Long. tota 5·4, alæ 2·7, caudæ 2·6.
Hab. Bogota.
Mus. Brit., Paris., &c.

This is a very common species in Bogota collections.

4. CHLOROSPINGUS CANIGULARIS.

Tachyphonus canigularis, Lafr. R. Z. 1848, p. 11 ; Bp. Consp. p. 237 ; Gray, Gen. App. p. 17.
Pipilopsis canigularis, Bp. Consp. p. 485.
Chlorospingus canigularis, Cab. Mus. Hein. p. 139.
Hemispingus Veneris, Bp. Notes Orn. p. 22.

Similis C. flavipectori, *sed rostro breviore, maxilla alba nec nigra, gula cinereo-alba nec brunnescenti-alba, capite nigrescentiore.*

Long. alæ 2·9.
Hab. Bogota.
Mus. Paris.

Prince Bonaparte's *Hemispingus veneris*, of which the type is in the Paris Museum, seems to me to be the same as this bird. It is certainly very closely allied to the common *C. flavipectus*, but I have no doubt it is really a distinct species.

5. CHLOROSPINGUS OLIVACEUS.

Poospiza ! olivacea, Bp. Consp. Av. p. 473.
Chlorospingus olivaceus, Sclater, Tan. Cat. Sp. p. 6.

Brunnescenti-olivaceus; capite nigricante; vertice et nucha pallidioribus, cinerascentibus; macula postoculari candida; loris et lateribus cervicis griseis: subtus pallide flavus, gutture et ventre medio grisescenti-albis.

Hab. Central America?

Mus. Paris.

This bird is of exactly the same cast of plumage as *C. flavipectus* and *canigularis*, but may be distinguished by the colouring of its head, which has a broad longitudinal paler band, and is darker, almost black, over the eyes and again beneath them, and by the white postocular spot. A specimen in my possession seems to be of Delattre's preparation, and agrees with that in the Paris Museum, upon which Prince Bonaparte established his *Poospiza olivacea.*

6. CHLOROSPINGUS FLAVIVENTRIS, sp. nov.

Olivaceus; capite cinereo, viridi paulum apparente; gula albescenti-cinerea: abdomine toto flavo: rostro nigro, mandibulæ inferioris basi albescente.

Long. tota 5·5, alæ 2·5, caudæ 2·25.

Hab. Trinidad (*Mus. Jard.*); Bolivia? (*Mus. H. E. S.*).

I have seen two specimens of this apparently unrecognized *Chlorospingus*, which agrees in form with the preceding species, but is distinguished by its wholly yellow abdomen. One of these specimens is in Sir William Jardine's possession, the other in the collection of the late Mr. H. E. Strickland.

7. CHLOROSPINGUS SPODOCEPHALUS.

Chlorospingus spodocephalus, Bp. Notes Orn. p. 22.

Flavo-olivaceus, subtus aurantius: capite toto cinereo, gula dilutiore: rostro nigro: pedibus rubellis. (Bp.)

Hab. Nicaragua (*Delattre*).

Mus. —— ?

8. CHLOROSPINGUS FLAVIGULARIS.

Pipilopsis flavigularis, Sclat. R. Z. 1852, p. 8; Cont. Orn. 1852, p. 131, pl. 98.

Olivaceus: gutture flavo: abdomine et mento cinereis; ventre medio albescentiore; crisso flavescente: rostro plumbeo, basi albo notata; pedibus plumbeis.

Long. tota 5·5, alæ 3·25.

Hab. Bogota.

Mus. Parisiensi.

I have never seen any specimen of this bird except the type in the Paris Museum. The bill resembles that of *C. flavipectus*, but is rather stronger.

b. Hemispingus.

9. CHLOROSPINGUS ATRIPILEUS.

Arremon atripileus, Lafr. R. Z. 1842, p. 335; Gray, Gen. p. 361.

Pipilopsis atripileus, Bp. Consp. p. 485.
Chlorospingus atripileus, Sclater, Tan. Cat. Sp. p. 6.

Olivaceus; pileo nigro; superciliis longis a fronte ad nucham antice flavidis, postice albis: subtus dilutior; gutture, pectore et ventre medio sordide flavis.

Long. tota 5·9, alæ 2·8, caudæ 3·0.
Hab. Bogota; vicinity of Quito (*Prof. Jameson*).
Mus. Brit., Jardinii, &c.

10. CHLOROSPINGUS MELANOTIS.

Chlorospingus melanotis, Sclater, P. Z. S. 1854, p. 158. pl. 68; 1855, p. 155.

Supra nigro-plumbeus, dorso imo brunnescentiore: alis caudaque brunnescentibus, illis penitus nigricantibus: loris et capitis lateribus cum regione auriculari nigris: subtus pallide ochraceo-rufus: mento summo nigricante; ventre medio dilutiore: rostro nigro: pedibus pallidis.

Long. tota 5·25, alæ 2·5, caudæ 2·25.
Hab. Bogota.
Mus. Brit.

This little species, of which there are two examples in the British Museum, both apparently Bogota skins, differs from all its congeners in the colouring of the lower surface of the body, which is of a pale reddish buff, growing much whiter in the middle of the belly. Above the plumage is lead-coloured, with a greenish tinge superinduced towards the lower part of the back. The wings and tail are brown, with slight greenish edgings; the ear-coverts and whole side of the face are black. In the second specimen, apparently not so mature, there is a light-coloured spot on the front, just above the nostrils. The bill of this species agrees with that of *Chlorospingus atripileus* in size, but is rather straighter in form, as in *C. verticalis*.

11. CHLOROSPINGUS RUBRIROSTRIS.

Arremon rubrirostris, Lafr. R. Z. 1840, p. 227; Gray, Gen. p. 361.
Nemosia rubrirostris, Lafr. R. Z. 1848, p. 11.
Pipilopsis rubrirostris, Bp. Consp. p. 485.
Hemispingus rubrirostris, Cab. Mus. Hein. p. 138.
Chlorospingus rubrirostris, Sclater, P. Z. S. 1855, p. 155.

Olivaceus, capite cinerascentiore: gutture toto pallide cinereo: abdomine flavo, lateribus olivascentibus: rostro rubro: pedibus pallidis.

Long. tota 5·7, alæ 3·1, caudæ 2·7.
Hab. Bogota.
Mus. Brit., &c.

12. CHLOROSPINGUS SUPERCILIARIS.

Arremon superciliaris, Lafr. R. Z. 1840, p. 227; Gray, Gen. p. 361.
Nemosia superciliaris, Lafr. R. Z. 1848, p. 227.
Pipilopsis superciliaris, Bp. Consp. p. 485.

Hemispingus superciliaris, Cab. Mus. Hein. p. 138.
Chlorospingus superciliaris, Sclater, P. Z. S. 1855, p. 155.
Hylophilus leucophrys, Lafr. R. Z. 1840, p. 227.

Olivaceus: pileo antico cinereo: fronte et superciliis cum macula suboculari albidis: subtus flavus: rostro plumbescente: pedibus pallide brunneis.

Long. tota 5·2, alæ 2·7, caudæ 2·5.
Hab. Bogota.
Mus. Brit., &c.

13. CHLOROSPINGUS XANTHOPHRYS.

Chlorospingus xanthophrys, Sclater, P. Z. S. 1856, p. 30.

Brunnescenti-olivaceus: loris nigricantibus: superciliis curtis a fronte ad oculum summum et corpore mediali subtus flavis: rostro nigro: pedibus pallide brunneis.

Long. tota 4·7, alæ 2·5, caudæ 2·4.
Hab. Bogota.
Mus. P. L. S.

I possess a single example of this small *Chlorospingus*. It is closely allied to *C. superciliaris*, but is inferior in size, has short yellow instead of longer whitish supercilia, and the body beneath only yellow quite in the middle, the sides being olive. Its olive plumage is also of a more brownish tinge, and the feet are pale brown or flesh-coloured, not plumbeous.

14. CHLOROSPINGUS VERTICALIS.

Nemosia verticalis, Lafr. R. Z. 1840, p. 227; Bp. Consp. p. 236; Gray, Gen. p. 366.
Chlorospingus verticalis, Sclater, P. Z. S. 1855, p. 155.

Cinereus, subtus dilutior, ventre medio albo: alis caudaque nigricantibus: capite toto cum gula nigris; vitta lata a fronte ad nucham fumoso-brunnea: rostro et pedibus nigris.

Long. tota 5·0, alæ 2·8, caudæ 2·8.
Hab. Bogota.
Mus. Brit., Berol.

15. CHLOROSPINGUS LICHTENSTEINI.

Nemosia verticalis, Licht. in Mus. Berol (*partim*).
Chlorospingus lichtensteini, Sclater, P. Z. S. 1856, p. 30.

Supra cinereus, alis caudaque nigricantibus: pileo atro, vitta mediali verticis ochracescenti-albida: subtus albidus, lateribus cinerascentibus.

Long. tota 6·3, alæ 3·0, caudæ 3·1.
Hab. New Grenada.
Mus. Berolinensi.

One specimen of this bird, which I observed in the Berlin Museum, was marked as having been received from M. Boissoneau of Paris, along with examples of the preceding species, from which it appeared not to have been distinguished. It is closely allied to that bird, but may be recognized by its rather larger size, and the black colouring of the head not extending round to the throat, as in *C. verticalis*, but the whole under surface being cinereous, growing white in the middle.

April 22, 1856.

Dr. Gray, F.R.S., in the Chair.

The following papers were read:—

1. On Two New Species of Birds (Nestor notabilis and Spatula variegata) from the Collection of Walter Mantell, Esq. By John Gould, F.R.S.

Mr. Gould brought before the notice of the meeting two species of birds from the New Zealand group of islands which he conceived to be new to science; one, a magnificent Parrot, pertaining to the genus *Nestor*; the other, an equally interesting species of Duck, belonging to the genus *Spatula*. Both these birds had been placed in his hands for the purpose of describing, by Walter Mantell, Esq.

The *Nestor*, which is called "*Keá*" by the natives, is by far the largest of the three species of the form now known, and is certainly one of the most interesting of the ornithological novelties lately discovered. It not only differs from its near allies *N. hypopolius* and *N. productus* in its greater size, but in the greater uniformity of its colouring, in the yellow toothed markings of the inner webs of the primaries and secondaries, and in the orange toothed markings of the inner webs of the tail feathers; the yellow colouring of the under mandible is another of the peculiarities by which it may be distinguished.

Mr. Mantell informed Mr. Gould that he first heard of the existence of the *Keá* about eight years ago from some old natives whom he was questioning as to the birds of the Middle Island. They said the *Keá* somewhat resembled the *Káka* (*Nestor hypopolius*), but that, unlike that bird, it was green, and added, that it used formerly to come to the coast in severe winters, but that they had not seen it lately. Mr. Mantell has only obtained the two specimens exhibited of this fine bird; they were shot in the Murihiku country, and for one of them he was indebted to Mr. John Lemon of Murihiku.

The following is a description of this new species, for which Mr. Gould proposes the name of

Nestor notabilis.

General hue olive-green; each feather tipped in a crescentic form with brown, and having a fine line of the same colour down the shaft; feathers of the lower part of the back and the upper tail-coverts washed near the tip with fiery orange-red; primaries brown, margined at the base with greenish-blue; tail dull green; inner webs of the lateral feathers brown toothed on their basal two-thirds with orange-yellow; all the tail-feathers crossed near the extremity with an indistinct band of brown, and tipped with olive-brown; feathers of the axillæ fine scarlet; under wing-coverts scarlet tipped with brown, the greater ones banded with brown and with yellow stained with scarlet; basal portion of the primaries and secondaries largely toothed with fine yellow, which is not perceptible on the upper surface unless the wings are very widely spread; upper mandible dark horn colour; under mandible yellow, becoming richer towards the point; feet nearly yellowish-olive.

Total length, 18 inches; bill, $2\frac{1}{2}$; wing, $12\frac{1}{2}$; tail, $7\frac{1}{2}$; tarsi, $1\frac{5}{8}$.

Hab. The Middle Island, New Zealand.

The Shoveller forms the fifth species known of the genus *Spatula*, and is distinguished from the other members by the dark crescentic markings which decorate the feathers of the breast, sides of the neck and scapularies. The species of this well-defined form previously described are *Spatula clypeata*, which inhabits Europe, North America, India and China; *S. rhynchotis*, which is found throughout Australia; *S. maculatus*, the habitat of which is Chili, and probably the neighbouring countries of Peru and Bolivia; and *S. capensis* of South Africa. For the fifth, or New Zealand species, Mr. Gould proposes the name of

SPATULA VARIEGATA.

Crown of the head and space surrounding the base of the bill brownish-black; on either side of the face between the bill and the eye a lunar-shaped streak of white, bounded posteriorly with speckles of black; cheeks, sides and back of the neck dark grey with greenish reflexions; front of the neck dark brown, each feather narrowly fringed with white; back brownish-black, the feathers of the upper part margined with greyish-brown; feathers of the breast, sides of lower part of the neck, the mantle and scapularies white, with a crescent of blackish-brown near the tip; under surface dark chestnut blotched with black; flanks lighter chestnut barred with black; lesser wing-coverts dull greenish-blue; greater wing-coverts dark brown, fringed at the tip with white; first elongated scapularies blue-grey, with a conspicuous line of white on the outer web next the shaft, bounded posteriorly with black; the next blue-grey, margined on the inner web with white; the remainder greenish-black, with a lengthened lanceolate mark of dull or brownish-white down the centre of the apical half; speculum deep green; primaries dark brown with lighter shafts; under surface of the shoulder white; on each side of the vent a patch of white freckled with black; under tail-coverts black, tinged with shining green; tail dark brown; irides bright yellow; bill dark purplish-black, the under mandible clouded with yellow; legs and feet yellow.

Total length, $16\frac{1}{2}$ inches; bill, 3; wing, $9\frac{1}{4}$; tail, $4\frac{1}{2}$; tarsi, $1\frac{5}{8}$.

Hab. New Zealand.

Remark.—This is by far the handsomest species of the genus.

2. DESCRIPTIONS OF TWO NEW SPECIES OF TRUE CUCKOOS (GENUS CUCULUS AS RESTRICTED).

BY JOHN GOULD, F.R.S.

CUCULUS STRENUUS, Gould.

Crown of the head, back of the neck, cheeks and chin dark grey; all the upper surface, including the upper tail-coverts, olive-brown, with shining purplish reflexions; tail olive-brown, crossed by four bands of darker brown, and tipped with buffy white; throat white, passing into the chestnut, which forms a band across the lower part of the chest, each feather also has a double mark of black and chestnut down the centre; breast and upper part of the abdomen white, crossed by semicrescentic bands of very dark brown bordered with pale chestnut-red; edge of the shoulder, lower part of the abdomen, vent and under tail-coverts white; upper mandible olive; lower mandible yellow; irides and feet rich yellow.

Total length, 15½ inches; bill, 1¼; wing, 9⅜; tail, 9.

Hab. Manilla.

Remark.—In outward appearance this species so nearly resembles the *Cuculus sparverioïdes*, that one description would nearly serve for both; but in size it so far exceeds that bird, as well as every other true Cuckoo I have yet seen, that I have no doubt of its being distinct, and I have therefore assigned it a separate specific appellation, and have selected the term *strenuus*, as indicative of its great size and strength.

The specimen from which the above description was taken now forms part of the collection at the British Museum.

CUCULUS HYPERYTHRUS, Gould.

Crown of the head, all the upper surface and wings dark slate-grey; spurious wings white; lores, ear-coverts, moustache, and a spot on the chin black; throat white, with a fine line of brown down the shaft of each feather; under surface dull rusty-red; tail grey, crossed by two narrow irregular bands of black bordered with brown, and by a very broad band of black near the extremity, the tip being reddish-brown; upper mandible black; lower mandible and feet yellow.

Total length, 11½ inches; bill, 1⅛; wing, 8; tail, 6½.

Hab. China.

Remark.—In size this species is rather less than the *Cuculus canorus* of Europe, and is altogether less elegant in its general contour. The rufous colouring of the breast and under surface, and the black marks on the cheeks and throat, characters seldom seen among the *Cuculidæ*, are the features by which it may be distinguished.

The specimen described, like the preceding, is deposited in the National Collection.

3. NOTE ON BUGLODYTES ALBICILIUS, *Bp.*

BY PHILIP LUTLEY SCLATER.

Prince Bonaparte, in his "*Notes Ornithologiques sur les collections rapportées par M. A. Delattre,*" read before the French Academy in 1853, has instituted a new genus, *Buglodytes*, allied to *Campylorhynchus*, Spix, and described but one species as belonging to it under the title of *B. albicilius.*

Having had an opportunity of examining this type (which is now in the British Museum), I have to state, that I believe that it is the same bird as was long ago named by Mr. Swainson "*Furnarius griseus,*" and is the type of Cabanis' genus *Heleodytes.* It has, however, nothing to do with *Furnarius*, and seems, as Prince Bonaparte has remarked, intermediate between *Campylorhynchus* and *Donacobius.* These forms appear to connect the American *Miminæ* very closely with the Wrens, and to render the position of the former group among the true Thrushes rather doubtful. The synonymy of *Buglodytes albicilius* will stand as follows·—

Furnarius griseus, Sw. An. in Men. p. 325.

Campylorhynchus griseus, Schomb. Reise in Brit. Guian. iii. p. 674.

Heleodytes griseus, Cab. Mus. Hein. p. 80; G. R. Gray, List of Gen. and Subgen. p. 26, no. 404.

Buglodytes albicilius, Bp. Notes Orn. p. 26; G. R. Gray, List of Gen. and Subgen. p. 32, no. 499.

My specimen of this bird is from Trinidad. Schomburgk's were collected in British Guiana. The examples upon which the name *Buglodytes albicilius* was founded were obtained by MM. Verreaux's collector in the vicinity of Santa Martha, on the north coast of New Grenada.

From Trinidad also I possess a bird which seems to be the *Heleodytes minor* of Cabanis. It is so similar to *Heleodytes griseus* in every respect except in size, that I question whether it may not be a variety of age or sex of that species.

4. ON SOME NEW OR IMPERFECTLY-KNOWN SPECIES OF SYNALLAXIS.

BY PHILIP LUTLEY SCLATER.

1. SYNALLAXIS RUFICAPILLA.

Synallaxis ruficapilla, Vieill. N. D. d'H. N. xxxii. p. 810; Enc. Méth. p. 622; Gal. Ois. pl. 174.

Sphenura ruficeps, Licht. Doubl. p. 42.

Synallaxis cinereus, Max. Beitr. iii. 685.

Synallaxis olivascens, Eyton, Cont. Orn. 1851, p. 150.

Olivascenti-brunnea, pileo toto cum nucha, alis extus et cauda rufis: striga superciliari flavida: loris et regione auriculari *nigricanti-cinereis: subtus albicanti-cinerea, hypochondriis et crisso brunnescentibus, ventre medio albicantiore cinereo.*

Long. tota 6·0, alæ 2·1, caudæ 3·0.

Hab. Brazil.

2. SYNALLAXIS SPIXI, sp. nov.

Parulus ruficeps, Spix, Av. Bras. i. pl. 86, p. 85 (♂.).

Synallaxis ruficapilla, Reich. Handb. d. Sp. Orn. p. 158.

Supra olivaceo-brunnea, pileo et alis extus rufis, cauda dorso concolore sed minus olivascente: capitis lateribus et corpore subtus cinereis: gutturis pennis intus nigris, extus argentescenti-albis: ventre medio albo: lateribus et crisso brunnescente tinctis.

Long. tota 6·5, alæ 2·1, caudæ 3·5.

Hab. Brazil.

These two *Synallaxes*, which appear to me to be very distinct birds, have always hitherto been confounded together. Specimens of *S. Spixi* are rather the most abundant in collections, and are usually marked *ruficapilla* or *ruficeps*, names both originally applied to the former species.

The *S. Spixi* may be distinguished by its brown tail, nearly the same colour as the back, not rufous like the head, as is the case in *S. ruficapilla*; by having no traces of yellowish supercilia, the whole sides of the head being uniform grey like the breast, and by its smaller and shorter bill, and longer, narrower and more pointed tail-feathers. The throat-feathers are black, finely edged with silvery white, which gives an appearance of a black patch on the throat when the plumage is slightly raised. In *S. ruficapilla* the throat and breast are uniform cineraceous white, and there is more olive-brown on the flanks than in the other species.

Another bird, very closely allied to these two, is *S. elegans*, which I have lately described in these Proceedings*, from Bogota. *S. pallida*, Max., is also very similar to *S. ruficapilla*, but has conspicuous white supercilia, and the under parts pale brown. *S. albescens*, Temminck, (which has been also united to *S. ruficapilla* by Prince Bonaparte and other writers) is likewise different, and more closely resembles *S. Spixi*, from which, however, it is to be distinguished by having only the back part of the head rufous. A sixth nearly allied species is the Bolivian *S. Azaræ*, d'Orb.

3. SYNALLAXIS CANICEPS, sp. nov.

S. dorso, alis caudaque cinnamomeo-rufis: capite toto cerviceque grisescentibus, pileo albescentiore: subtus lactescenti-alba: rostro et pedibus pallidis: remigibus intus nigricantibus: rostro elongato, parum incurvo, flavicante: pedibus pallide brunneis.

Long. tota 5·5, alæ 2·3, caudæ 2·1.

Hab. Brazil.

Mr. Eyton was obliging enough to send me his specimens of

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* P. Z. S. 1856, p. 25.

Synallaxes for examination a short time since, and most liberally offered to allow me to describe any I might think new. A single example of the present species which was in the collection seems different from any previously named. I have therefore taken advantage of Mr. Eyton's kindness to give characters to it under the specific title of *S. caniceps*. There is no other member of the genus that I am acquainted with that much resembles it in colouring. The rectrices are ten in number.

Mr. Eyton's *S. modesta*, described in 'Contributions to Ornithology' (1851, p. 159), of which the types are in his collection, is one of a small group of species from Bolivia, Chili and Patagonia, consisting of *S. flavigularis*, Gould, *S. sordida*, Less. and *S. brunnea*, Gould; but I am doubtful whether all the four are really specifically distinct.

Professor Reichenbach, in his '*Handbuch der Speciellen Ornithologie*,' has chopped up the genus *Synallaxis* into seven or eight different sections. Some of these ought no doubt to be adopted, but the Professor has unfortunately referred some of the most closely allied species to different sections, and I think it better therefore to continue the employment of the old name for the whole of them, until a more accurate revision and arrangement of the whole of the species can be made.

5. ON THE POSITION OF THE GENUS PROSERPINA IN THE SYSTEM, AND A DESCRIPTION OF ITS DENTITION.

BY DR. J. E. GRAY, F.R.S., P.B.S., ETC.

In the Synopsis of the British Museum for 1840 (p. 129), I mention amongst the genera of *Helicidæ* which have a thin edge to the mouth of the shell a genus named *Proserpina*. It is peculiar amongst land shells for having a series of laminæ revolving in the throat, and the outer surface of the shell polished. This genus has been adopted by Sowerby, Pfeiffer, Jonas, and most other authors.

Mr. Duclos referred the species to the genus *Carocolla*; Adams, Pfeiffer, and Jonas in some of their earlier works having considered them as species of the extended genus *Helix*.

M. d'Orbigny in his work on the Mollusca of Cuba, renamed the genus *Odostoma*, and referred it with doubt to the family *Cyclostomidæ*.

Though the shell is far from uncommon in the West Indies, Cuba, and some parts of the American continent, the animal escaped the researches of Guilding, Adams, Chitty, d'Orbigny and other observers. In 1854, when in Berne, my friend, Dr. Shuttleworth, informed me it had two subulate tentacles, with the eyes sessile on the outer side of their base; and Mr. Bland has mentioned that the animal has no operculum, and absorbs the septa between the upper whorls of the spire, like some species of the genera *Neritina, Auricula, Helicina, Stomastoma*, and a few *Helices*.

These observations induced me to place the family in my most modern arrangement near *Oligyradæ*.

Mr. Cuming has kindly brought to me a specimen of the genus, with its animal, which Mr. Salle discovered under leaves in the mountains of Mexico, some distance from the sea.

The species is allied to *Proserpina eolina*, but differs in the spire being much more convex; I hence propose to call it *P. Salleana*. Like *P. eolina*, it differs from all the others I am acquainted with in the upper surface of the whorls being rugose, and only smooth on the lower surface, as is the case with many *Naninæ*, showing, if the smoothness and polish of the surface depend on the extension of the mantle of the animal, the extension in this kind is confined to the under surface of the shell, as is proved by the examination of the animal itself.

This being the case, I am inclined to form this shell and *P. eolina* into a new genus under the name of *Ceres*, characterized by the roughness of the upper surface and the non-dilatation of the front edge of the mantle, which is believed to be dilated in all the other species of the true *Proserpinæ*.

It will be seen that most authors have placed these Mollusca either with *Helices* or *Oligyræ*, and I was much inclined to follow their example, even after a cursory examination of the animal itself. It has much the external appearance of the animals of the lateral family, having a short, broad, annulated muzzle with a triangular mouth, two subulate lateral tentacles, with the eyes sessile on the outer side of their base; a moderately short foot, truncated in front, acute and keeled above-behind, without any appearance of beards or any membranous ridge on the sides; the shell is slightly sunk into a cavity in the front of the upper keeled part of the foot, as if it possessed an operculum; the edge of the mantle is free from the back of the neck, producing an open nuchal respiratory cavity like *Cyclostoma* and *Oligyra*, and other operculated and unisexual land shells.

When the animal is more closely examined, it is found that there is no operculum, the concavity on the front part of the foot into which the under surface of the shell fits is furnished with a continuation of the mantle, having a raised crumpled edge evidently capable of being expanded over the under surface of the shell, and explaining the polished surface of this part of the shell;—a structure I have not observed in any other Mollusca. This extension of the mantle might be mistaken for the mantle of the operculum, which, as far as I know, is always quite distinct and separate from the mantle of the shell, but in this animal the fringed edge of the concavity is in direct continuity with the true or shell-forming mantle, both at the columnar and the outer external angle of the mouth of the shell.

The teeth of the lingual membrane are unlike those of *Cyclostoma* and *Helicina*, which agree with those of *Littorina* and other marine Rostriferous univalves. The teeth resemble those of the typical *Riphidoglossæ*, as in the families *Neritinidæ*, *Turbonidæ*, *Trochidæ*, *Roliolidæ*, &c. All the Mollusca hitherto known belonging to these families are aquatic, and all but the genera *Neritina* and *Navicellus* are truly marine. They all have well-developed gills, and the greater part have a more or less developed lateral membrane on each side of the body, furnished with three or more beards on its lower surface, and almost all have the eyes placed on a more or less distinct peduncle at the outer side of the base of the tentacles, all characters absent in *Proserpina*. But notwithstanding all these peculiarities, I am inclined to arrange the family *Proserpinidæ* (including *Proserpina* and *Ceres*) in the order *Scutibranchia*, section *Raphidoglossa*, and to form a suborder for it under the name *Pseudobranchia*, in the same manner as the families *Cyclophoridæ* and *Helicinidæ* form the suborder *Phaneropneumona* of the order *Rostriferæ*.

It may be thus characterized:—

Pseudobranchia. Gills vascular, branched on the inner surface of the mantle; body and shell spiral; eyes sessile; operculum none.

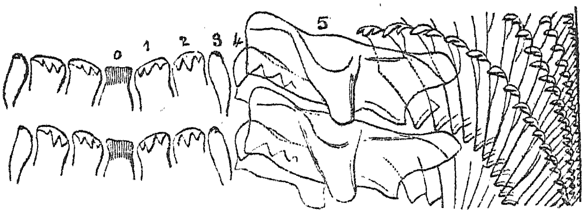
The open respiratory cavity, the separate sexes and the form of the teeth, preclude its being arranged with the *Pulmonobranchiata*, with which it has been hitherto placed on account of its terrestrial mode of life; but as our knowledge of the structure of Mollusca extends, it is found that some *Pulmonobranchiata* are marine, as *Siphonariadæ* and *Amphibolidæ*, in the same manner as the terrestrial *Cyclophoridæ* and *Oligyradæ* are properly arranged in the marine and fluviatile *Rostrifera*. The *Proserpinadæ* might be arranged with the latter families, as was proposed before the teeth were known; but there can be little doubt that the animals which have the very numerous rows of such peculiar-formed teeth as the *Raphidoglossa*, must have very different habits and modes of life from those which have only seven rows of nearly uniform teeth, of the *Tænioglossa* or Rostriferous Mollusca.

And though the animal of the *Proserpinadæ* differs from the more typical *Raphidoglossæ*, yet all the peculiarities, except the vascular organs of respiration and terrestrial mode of life, are found in some of the genera of the suborder. Thus the eyes of *Fissurella* are sessile on the outer side of the base of the tentacle; the whole family of *Neritinidæ* and some of the genera of *Fissurelladæ* are destitute of any lateral fringe or beards; so that though these organs are the usual characteristic of these animals, their absence is no proof that the family does not belong to the group, especially when we consider that the teeth have all the peculiarities, indeed, are perfectly typical in form with this well-marked and very peculiar tribe, and very probably it may prove that many terrestrial Mollusca may properly belong to the order.

The lingual membrane elongate, broad, with numerous longitudinal series of close-set teeth; the central teeth in 11 longitudinal series, 5. 1. 5. the two outer teeth on each side being large and irregular; the lateral teeth are numerous, crowded, compressed, linear, nearly equal, transparent, with recurved tip.

In *Ceres Salleana* the lingual membrane is broad, elongate, with close-set teeth. Teeth .00. 5. 1. 5.00. in numerous longitudinal series; the central tooth is oblong, with a smooth recurved tip, the

1st and 2nd lateral teeth rather broader than the central, with three-toothed recurved tip, the 3rd narrow, elongate, with a slight recurved end, the 4th and 5th much larger, oblong and irregular shaped, the 4th about half the width of the 5th, with 3 or 4 denticles on the inner side of the upper edge; the 5th very large, broad, with a large subcentral reflexed lobe; the lateral teeth are very numerous, subequal, compressed, transparent, with a recurved tip, which in the inner teeth of the series is bifid.



Teeth of *Ceres Salleana*.

1. Ceres Salleana, Gray.

Shell yellow, upper surface conical, convex, rugulose, with numerous close, parallel, granular concentric striæ; lower surface smooth, polished; keel acute, expanded.

Hab. Cordera, State of Vera Cruz, Mexico, in dense woods, under dead leaves (*M. A. Sallé*).

2. Ceres eolina. *Proserpina eolina*, Duclos, Mag. Zool.

The shell orange; upper surface flat, rugulose, with numerous short, parallel, diverging, narrow, sharp ridges; keel very acute, bent up; lower surface convex, subhemispherical, polished, orange; axial callosity thin, semitransparent, whitish.

6. Remarks on Nika edulis, Risso.

By William Thompson.

The possession of a healthy specimen of *Nika edulis* has enabled me to offer the following remarks, which, I trust, may add something new to what is already known of this species.

The first specimen I obtained by dredging on the 2nd July, 1853. I find by my notes, which were made at the time, that it was a female, and in spawn; the ova were darkish green, the animal itself was of a cream colour, and spotted with red dots; the spots were of different sizes, perfectly round, and rather thickly and regularly placed. This specimen was dead before I examined it, and this will account for the difference of colour as contrasted with the specimen, the more immediate subject of the present paper. I had previously obtained one specimen, and a third specimen, also in spawn, was brought to me on the 20th July, 1855; the ova were bright green, and the animal of a cream colour. This specimen was dead when examined.

The subject of the present paper was brought to me alive by my dredger on the 21st February in this year, and lived three weeks. It was dredged in Weymouth Bay, near the mouth of the harbour. The colour in this living specimen was very different from that of the dead specimens I had previously obtained. When first brought to me, the whole animal was a light greenish-drab, irregularly and thinly sprinkled with pure white stars; the carapace and covering of the abdomen were alike transparent, and the intestines could be easily seen beneath. I could also detect the breathing apparatus placed on each side at the back of the mouth; the movement was similar to that of a long rope when gently waved at one end. After a few days' confinement it changed colour, five or six broadish bands of a lovely rose colour appeared, the bands of colour being restricted to the back portion of each segment of the body; the tail also changed to the same rosy hue, in the course of two or three days the animal again assumed its original colour. I have noticed this change of colour in many of the *Palæmonidæ* and *Crangonidæ*, and I believe it to arise from the transparency of the cuticle enabling any change in the body itself to be seen through it, and that the change of colouring of the body is occasioned by fear or some instinct. In all the specimens of *Nika* I have obtained the shell is soft as in a new-moulted Prawn, and in piercing them with a fine pin for preserving, the shell bends before it. Is this of any value as a generic character? M. Milne-Edwards says they resemble *Athanas* "in possessing but a small rostrum;" they also resemble them in their mode of locomotion, as they then carry the external pedipalps and first pair of feet extended before them in a line with their body; their movements are also slow and deliberate, and they appear to progress by walking and not by swimming; when alarmed they shoot backwards by striking forward with their tail, as is the habit of all the long-tailed Crustaceans.

I now proceed to lay before you the information I have obtained as to its habits.

I may assert that *Nika* is essentially a burrowing genus. I was not prepared to find it so, as I considered its slender limbs and its prominent eyes but ill-adapted for the purpose; however, we live and learn, and I have learned that practice is far better than theory; had I relied on the latter I should have insisted that *Nika edulis* was not a burrower.

In accordance with a plan which I have formed of attempting to study the habits of any of our rarer marine animals I may have the good fortune to meet with, I placed my prisoner in a vase with a few weeds and some pebbles, that being the nature of the ground on which it was dredged; I left it in this vessel for two days, and found out it was not at home, and, in fact, that a pebbly bottom was not its choice. I therefore removed it to a large earthenware pan in which I had previously placed a few weeds, having filled it also to the depth of three inches with coarse gravel; I then left it for an hour, and on examining the vessel I could not find my friend; I searched on the table, thinking it might have thrown itself out, but it was without success; I turned over the stones and weeds, and with the like result. I then commenced turning over the gravel, and at last found that *Nika edulis* was a burrowing Crustacean. I accordingly transferred it for facility of observation to a vase, and placing in it the same material, namely, the coarse gravel and weeds, in this gravel it buried itself three several times. Burrowing in this loose material was evidently a difficult matter; it required great patience and perseverance to overcome the difficulty occasioned by the loose gravel constantly falling in on the excavator; it took the animal ten minutes to burrow to about the depth of three parts of its length. I afterwards transferred it to a vase with sand to the depth of three or four inches at the bottom; in this it quickly disappeared, three minutes sufficing to completely cover itself. In this vase it was that I made the following observations on it.

Its mode of mining is extraordinary: lying at the bottom of the vase, it commenced proceedings by probing the sand around with its third pair of feet, and inserting them to some depth in it; when it found a spot suited for the purpose, that is, free from any large stones, it at once commenced excavating. These operations were carried out by the external pedipalps, which are very long and strong, and also by the first, third and fourth pairs of legs; the second pair of legs, as may be supposed, are for this purpose perfectly useless: they are as much as possible placed out of the way, being bent up snugly with the hand turned backwards: the only motion I could detect was a nervous action in the moveable finger, constantly attempting to clutch objects, but not seizing anything. The fifth pair of feet have a simple though useful office assigned them: it is to support the body in the proper position until the burrowing has progressed sufficiently to enable the burrower to do without their support; they are then immediately called into more active employment, and assist in the work of excavation. The spot for burrowing having been selected, the little animal steadies its body by means of its fifth pair of legs, and this allows the greatest freedom of action to the body. The pedipalps perform a prominent part in the burrowing; the nail on the last joint is curved slightly forward, and the advantage of this is clearly seen, as in digging, the pedipalps are forced into the sand or shingle, and are thus forced forward and outwards, and they prevent the side of the burrow from falling in; the third and fourth pairs of feet are in constant motion, probing the sand and loosening it, thus lightening the labour for the pedipalps; all these movements take place very regularly and at the same time. A small hollow having been made, the animal raises its body by means of its fifth pair of legs to nearly a right angle with the bottom; its eyes, which are very large and carried at right angles with the body, are thus suddenly thrown forward with a spring in a line with the rostrum, and the hollow is surveyed; should it not be of a sufficient depth the body is again lowered and the burrowing continues, the eyes resuming their original position; when the hole is sufficiently deepened, the eyes are again brought forward, the antennæ are thrown back in a line with the body, and the animal forces its head in the hole it has made; this is facilitated by the body being gradually raised by means of the fifth pair of legs; the head being inserted, the burrowing continues with increased energy, and the animal assumes the position as in photograph No. 2; this view shows the sand which has been thrown up accumulated in a heap under the body.

I have occasionally found it continue in this position, but generally it burrows perpendicularly, until only the tips of the antennæ are visible.

I placed my captive in a glass vase, and he having selected the side of the glass for burrowing (probably from the glass forming one firm side to the work), enabled me to watch every movement; the sand appeared to be passed to the mouth of the hole by the legs and false legs, when it filled round the body and filled in as the animal passed downwards. The antennæ are delicately sensitive. I believe this sensitiveness depends on the sense of touch: the slightest contact with them sets the animal in motion (and this when it is buried some depth), using every exertion to burrow deeper. It is evidently a night-feeding genus, as it remained buried and inactive during the day, but the state of the sand in the tank in the morning proved that it had not been idle during the night.

From these facts I am justified in stating that *Nika edulis* is a burrowing species (if not of a burrowing genus), and that its burrowing is only by day to hide itself from its enemies, and not to procure food.

The description I have given of the colouring of this species will be found to be different from that given by Risso, as stated by Mr. Milne-Edwards. I should have great diffidence in differing from these eminent naturalists had I not imagined that their descriptions might have been taken from cabinet specimens. Had I waited to describe my specimen until after its death, I must have described it as it now is, namely, *flesh-red*; I find all the thinner-shelled Crustacea change more or less of a flesh-red, with the exception of the *Crangonidæ*.

The different plans of burrowing in the different genera are very interesting, and may probably be given in another paper.

The photographs to illustrate these notes represent

No. 1 and No. 1*a*.—*Nika edulis* (natural size) taken from a living specimen (on a collodion plate) in two different positions.

No. 2.—The same (natural size) when partially buried. This view shows the sand accumulated under the body of the animal.

No. 3.—A view of a portion of Weymouth Bay, taken by a collodion negative. The camera being sunk in two fathoms of water, the line of demarcation between the water and air is here plainly visible.

No. 4.—A photograph of *Aphrodita aculeata* taken (in two different positions) from a living specimen two-thirds of its natural size.

Dr. Crisp placed before the Society drawings of the viscera, of the size of life, of a large Pike (*Esox lucius*). The subjoined are the dimensions of the fish and the weight of the body and of the viscera:—

Weight of body, 28 lbs.; length, 3 feet 7 inches; largest circumference, 23 inches. Weight of heart, 160 grains; of liver, 10 oz.; of kidney, 1 oz.; of spleen, 171 grains; of brain, 75 grains. The diameter of the eye was 13 lines, and the largest tooth (maxillary) was 7 lines in length.

Alimentary canal.—Œsophagus, 6 inches; stomach, 9 inches; intestines, 3 feet 3 inches. Total, 4 feet 6 inches.

The kidney, which was very thin, measured 19 inches in length; the air-bladder, 18 inches.

The gall-bladder, seated at the upper part of the unlobed liver, of a pyramidal shape; it contained about 3 drachms of bile.

Portions of a carp were found in the stomach, which, judging from the scales and some of the cranial bones, must have been of large size; probably 2 or 3 lbs. The most interesting fact, however, that presented itself was the large size of the oviducts. These weighed 7 lbs., and measured 22 inches in length. As near as could be computed, the number of ova amounted to about 700,000. The fish was taken in Holland about the 8th of the present month, April, and the ova appeared to be matured.

The diameter of the blood-corpuscle of this fish was the same as that of the blood-corpuscle of smaller specimens.

Dr. Crisp had not been able to find any account of the dissection of a large Pike, and for this reason he had placed an outline of the visceral anatomy before the Society.

Dr. Crisp exhibited the drawing of a hairless Mouse, with the skin corrugated in the same manner as in those exhibited by Mr. Gaskoin at a recent meeting of the Society. The specimen, No. 120, is in the Museum of the College of Surgeons; it was found alive in the kitchen of the late Mr. Clift, and is thus described in the College Catalogue under the head Monstrosities:—"A common Mouse, which from its birth had not the slightest appearance of hair upon its skin, being perfectly naked."

May 13, 1856.

Dr. Gray, F.R.S., in the Chair.

The following papers were read :—

1. Description of a New Trogon and a New Odontophorus. By John Gould, F.R.S., V.P.Z.S., &c.

Trogon aurantiiventris, Gould.

Male : Forehead, face and chin dull black ; head, sides of the neck, breast, back and upper tail-coverts golden-green ; wings slaty-black, the coverts and secondaries finely freckled, and the primaries margined at the base with white ; two centre tail-feathers bronzy-green, narrowly tipped with black ; the two next on each side bronzy-green on their outer webs, the inner webs and the tips black ; three outer tail-feathers on each side black, crossed by numerous narrow bars of, and narrowly tipped with, white ; under surface rich orange, separated from the green of the chest by a semilunar mark of white ; thighs black ; bill orange ; feet dark grey.

Total length, 10 inches ; bill, $\frac{7}{8}$; wing, $5\frac{3}{8}$; tail, 6.

Female : Head, all the upper surface and breast orange-brown ; wing-coverts brown, minutely freckled with brownish-black ; abdomen pale orange ; two central tail-feathers reddish-brown, narrowly tipped with black ; the two next on each side brown on their outer webs, the interior webs and tips black ; three lateral feathers black at the base, their outer webs and apical portions white, minutely freckled with black, and a narrow irregular band of black near the tip.

Hab. near David, Veragua.

Remark.—This species is very closely allied to *Trogon puella* : being precisely similar in every character, except that of the colouring of the breast, which is orange instead of scarlet ; both these species are remarkable for the regularity of the markings of their tail-feathers, and for the markings extending to the tip.

Odontophorus veraguensis, Gould.

Male. Crown of the head and crest dark rust-red ; throat black, with a line of white down the centre of each feather ; back reddish-brown, freckled with black, and a faint line of white down the centre of each feather ; wings brown, mottled and freckled with black, and with a small indistinct spot of buff near the tip of each of the coverts ; scapularies brown, with a light stripe down the centre, and with a large blotch of brownish-black near the apex of the inner web ; rump pale brown, obscurely spotted with black ; under surface light chocolate-brown, with a spot of white more or less encircled with black near the tip of each feather.

Female : Differs in having the forehead and upper feathers of the crest slaty-brown; and the spots on the breast smaller and less conspicuous.

Total length, 10 inches; bill, $\frac{5}{8}$; wing, $5\frac{3}{8}$; tail, $2\frac{3}{4}$; tarsi, $1\frac{5}{8}$.

Hab. Veragua.

Remark.—This species is nearly allied to *Odontophorus guttatus*, but differs in the lighter colouring of the breast and the redder hue of the crest. Specimens were procured by Dr. Seemann at Panama, and by Mr. Bridges from near David in Veragua.

2. SYNOPSIS AVIUM TANAGRINARUM.—A DESCRIPTIVE CATALOGUE OF THE KNOWN SPECIES OF TANAGERS.

BY PHILIP LUTLEY SCLATER, M.A., F.Z.S., &c.

PART II.—containing the genera *Pyrrhocoma*, *Nemosia*, *Cypsnagra*, *Tachyphonus*, *Trichothraupis*, *Eucometis*, *Lanio*, *Phœnicothraupis*, *Lamprotes*, *Orthogonys*, *Pyranga* and *Ramphocelus*.

Genus XIII. PYRRHOCOMA.

Pyrrhocoma, Cab. Mus. Hein. p. 138 (1851).

Rostrum breviusculum, incurvum, dente finali subobsoleto, mandibula superiore tumida: alæ subbreves, rotundatæ, remigibus quarta et quinta tertiam superantibus et longissimis: cauda modica.

1. PYRRHOCOMA RUFICEPS.

Tachyphonus ruficeps, Strickl. Ann. N. H. 1840, p. 419; Gray, Gen. p. 365; Bp. Consp. p. 237.

Pipilopsis ruficeps, Bp. Consp. p. 485.

Pyrrhocoma ruficeps, Cab. Mus. Hein. p. 138.

Schistaceus, capite toto et gutture castaneis: fronte, loris et mento summo nigris.

Long. tota 5·6, alæ 2·6, caudæ 2·5.

Hab. Brazil; S. Paolo (*Sw.* in Mus. Cantab.); Paraguay (*Natterer*); Ypanema (*Von Olfers*).

Mus. Brit., Paris., Berol., &c.

Genus XIV. NEMOSIA.

Nemosia, Vieill. Analyse, p. 32 (1816).

Hemithraupis, Cab. Mus. Hein. p. 21 (1851).

Thlypopsis, Cab. Mus. Hein. p. 138 (1851).

Rostrum tenue, elongatum, incurvum, acutum, dente finali fere nullo: alæ elongatæ, remige prima longa, tribus proximis paulo longioribus, æqualibus et longissimis: cauda modica, subquadrata: sexus dissimiles.

a. *Nemosia.*

1. NEMOSIA PILEATA.

Tangara à coiffe noire de Cayenne, Buff. Pl. Enl. 720. fig. 2.
Tanagra pileata, Bodd. Table d. Pl. Enl.; Gm. S. N. 898.
Nemosia pileata, Vieill. N. D. d'H. N. xxii. p. 490; Enc. Méth. p. 787; Lafr. et d'Orb. Syn. Av. in Mag. de Zool. 1837, p. 28; d'Orb. Voy. p. 261; Gray, Gen. p. 366; Bp. Consp. p. 236.
Hylophilus cyanoleucus, Max. Beitr. iii. p. 734 (♂).
Hylophilus cæruleus, ib. p. 731 (♀).
Tangara à coiffe noire, Desm. Tan. pl. 41.
Hooded Tanager, Lath. G. H. vi. p. 13.
Pico de punzon negro azul y blanco, Azara, no. 105 (♂).
P. d. p. azul y blanco, id. no. 110 (♀).

Plumbescenti-cærulea, pileo supero cum capite et cervice laterali nigris: striga præoculari et corpore subtus albis: rostro nigro: pedibus flavidis.—♀ supra minus cærulescens et nigro colore omnino carens; subtus minus pure alba.

Long. tota 4·7, alæ 2·8, caudæ 1·8.

Hab. Cayenne; Brazil, Para (*Wallace*), Mexicana (*Wallace*), Bahia (*P. Max.*); Nauta (*Cast.* et *Dev.*); Bolivia, Chiquitos (*d'Orb.*); Paraguay (*Azara*); Venezuela, Caraccas (*Levraud*).

Mus. Brit., Paris., &c.

b. *Hemithraupis.*

2. NEMOSIA GUIRA.

Sylvia brasiliensis viridis, Briss. Orn. iii. 533.
Motacilla guira, Linn. i. p. 335.
Tang. olive à gorge noire de Cayenne, Buff. Pl. Enl. 720. fig. 1.
Tanagra nigrigula, Bodd. Table d. Pl. Enl.
Tanagra nigricollis, Gm. S. N. p. 894.
Hylophilus guira, Max. Beitr. iii. p. 736.
Nemosia nigricollis, Vieill. N. D. d'H. N. xxii. p. 491; Enc. Méth. p. 788; Lafr. et d'Orb. Syn. Av. in Mag. de Zool. 1837, p. 28; d'Orb. Voy. p. 261?; Hartl. Ind. Az. p. 7; Gray's Gen. p. 366.
Nemosia guira, Gray's Gen. App. p. 17; Bp. Consp. p. 236.
Hemithraupis guira, Cab. Mus. Hein. p. 21; Bp. Consp. p. 312.
Pico de punzon amarillo barba negra, Azar. Pax. no. 102.
Guira Warbler, Lath. G. H. vii. p. 193.

Flavescenti-olivacea; superciliis longis et vitta gutturem nigrum undique cingente flavis: pectore et dorso postico cinnamomeis: ventre cinerascenti-flavido, crisso saturatiore. ♀ flavicanti-olivacea, uropygio clariore: subtus valde dilutior.

Long. tota 5·0, alæ 2·6, caudæ 2·0.

Hab. Cayenne; Brazil, south-eastern provinces (*P. Max.*); Bolivia (*d'Orb.* ?).

Mus. Brit., Paris., &c.

There are slight variations in colouring between the Brazilian and

Cayenne examples of this species, but not sufficient to lead me to consider them distinct.

3. NEMOSIA GUIRINA, sp. nov.

Nemosia guira, Sclater, P. Z. S. 1855, p. 155.

Flavescenti-olivacea, superciliis longis cum plaga cervicali utrinque conjunctis flavis: gutture et capitis lateribus nigris: dorso postico cinnamomeo, pectore item cinnamomeo sed saturatiore et magis castaneo: abdomine cinerascenti-flavido, crisso flavicante.

Long. tota 5·0, alæ 2·9, caudæ 2·0.

Hab. New Grenada, Bogota; East Peru.

Three specimens of what would at first sight appear to be *N. guira*, in my possession, two of which are from New Grenada and the third from Peru, offer such a marked difference in the length of the wing on comparison with specimens from the eastern coast, that I cannot avoid separating them specifically. They are also distinguishable, as the yellow colour is more developed on the sides of the neck, but does not form a band between the breast and black throat, as in *N. guira*. And in the *N. guirina* the breast has more of a deep chestnut tinge, which extends quite up to the black throat.

Perhaps d'Orbigny's Bolivian *N. guira* may be rather referable to this species than to the previous bird.

4. NEMOSIA FLAVICOLLIS.

Nemosia flavicollis, Vieill. N. D. d'H. N. xxii. 491; Enc. Méth. p. 788; Gal. Ois. p. 99. pl. 75; Gray, Gen. p. 366; Bp. Consp. p. 236.

Tanagra speculifera, Temm. Pl. Col. 36. fig. 1. ♂. 2. ♀.
Sylvia melanoxantha, Licht. Verz. d. Doubl. p. 34.
Hylophilus melanoxanthus, Max. Beitr. iii. 736.
Hemithraupis flavicollis, Bp. Consp. p. 312.
Hemithraupis melanoxantha, Cab. M. H. p. 21.

Nigra, dorso postico flavo: speculo alari et corpore subtus albis: gutture aureo: crisso flavo, dorso concolore. ♀ *supra brunnescenti-olivacea: subtus flavida, medialiter clarior: alarum marginibus flavicantibus.*

Long. tota 5·1, alæ 2·7, caudæ 2·1.

Hab. Brazil (*P. Max.*).

Mus. Brit., &c.

5. NEMOSIA INSIGNIS, sp. nov.

Nigra, brunnescente tincta: speculo alari et corpore subtus albis: interscapulio et dorso inferiore cum gutture et crisso flavis. ♀ *brunnescenti-olivacea, alarum et caudæ marginibus flavescentibus: subtus flavida, lateribus obscurioribus.*

Long. tota 5·5, alæ 2·9, caudæ 2·1.

Hab. South Brazil.

Obs. *Similis* N. flavicolli, *sed crassitie majore, dorso flavo altius ascendente et gutture pallidius flavo, dorso fere concolore, distinguenda.*

I possess three specimens of this *Nemosia*, male, female and young male, out of a collection formed, I believe, in the southern part of Brazil. They are certainly larger in all their dimensions than the *N. flavicollis*, besides showing the other differences above noted, and I think can hardly be passed over as merely a local variety of that species.

6. NEMOSIA AURICOLLIS, sp. nov.

Nemosia flavicollis ex Cayenna, auct.

Saturate nigricanti-brunnea; speculo alari parvo albo: dorso postico, gutture et crisso aureo-flavis, abdomine albido.

Long. tota 4·6, alæ 2·7, caudæ 1·9.
Hab. Cayenne; East Peru, river Ucayali (*Hawxwell*).
Mus. Brit., &c.
Obs. N. flavicolli *simillima, sed colore brunneo, et dorso postico aurescentiore flavo, necnon speculo alari magis celato, distinguenda.*

7. NEMOSIA PERUANA.

Hemithraupis peruana, Bp. R. Z. 1851, p. 173; Note s. l. Tang. p. 24.

Nemosia peruana, Sclater, Tan. Cat. Sp. p. 7.

Nigra, brunnescente tincta; speculo alari albo: dorso postico toto, gutture, crisso et maculis in tectricibus alarum aureo-flavis: abdomine albo: pectore paululum nigro variegato. ♀ olivascenti-brunnea, uropygio et alarum caudæque marginibus flavicantioribus; subtus flavida, ventre dilutiore, crisso saturatiore.

Long. tota 5·0, alæ 2·6, caudæ 2·0.
Hab. East Peru.
Mus. P. L. S.
Obs. *Species maculis alaribus aureis inter affines dignoscenda.*

8. NEMOSIA ALBIGULARIS.

Nemosia albigularis, Sclater, P. Z. S. 1855, p. 109. pl. xcix. et p. 155.

Nigra: dorso postico et crisso cum macula collari utrinque et plumis narium quibusdam aureo-flavis: speculo alari albo: subtus alba, pectoris et laterum plumis nigro variegatis.

Long. tota 4·2, alæ 2·5, caudæ 1·8.
Hab. New Grenada, Bogota.
Mus. Brit., Joh. Gould, &c.

9. NEMOSIA RUFICAPILLA.

Nemosia ruficapilla, Vieill. N. D. d'H. N. xxii. p. 493; Enc. Méth. p. 788; Gray, Gen. p. 366; Bp. Consp. p. 236.

Sylvia ruficapilla, Vieill. Gal. Ois. Suppl. pl. 3.
Hylophilus ruficeps, Max. Beitr. iii. p. 725; Gray, Gen. p. 200.
Hemithraupis ruficeps, Cab. Mus. Hein. p. 21; Bp. Consp. p. 311.

Olivaceo-viridis; capite et gutture undique castaneis: pectore *et dorso postico cinnamomeis: macula cervicali utrinque aurea: abdomine cineraceo, medialiter flavo-virescente, crisso flavicante.*

Long. tota 5·0, alæ 2·6, caudæ 2·1.

Hab. Brazil, Rio; Bahia (*P. Max.*).

Mus. Brit., &c.

c. *Thlypopsis.*

10. NEMOSIA SORDIDA.

Nemosia sordida, Lafr. et d'Orb. Syn. Av. in Mag. de Zool. 1837, p. 28; d'Orb. Voy. p. 261. pl. 18. fig. 2; Gray, Gen. p. 366; Bp. Consp. p. 237.

Nemosia fulvescens, Strickl. Ann. N. H. (1844), p. 420; Gray, Gen. p. 366; Bp. Consp. p. 236.

Thlypopsis fulvescens, Cab. Mus. Hein. p. 138.

Nemosia blanda, Licht. in Mus. Berol.

Brunnescenti-cinerea; pileo cinnamomescenti-castaneo: capitis lateribus et gula flavis: abdomine dilute brunnescenti-ochraceo, medialiter albescentiore.

Long. tota 5·0, alæ 3·7, caudæ 3·1.

Hab. Bolivia, Yuracares (*d'Orb.*).

Mus. Brit., Paris., Berolin.

I have compared a specimen of this bird, which is in my own possession, with d'Orbigny's type in the Paris Museum and the example of *N. fulvescens* which is in Mr. Strickland's collection. It seems to agree with both of these nearly enough to induce me to regard the several appellations given by these writers as probably synonymous.

11. NEMOSIA RUFICEPS.

Tachyphonus ruficeps, Lafr. R. Z. 1848, p. 173.

Thlypopsis fulviceps, Cab. Mus. Hein. p. 138.

Cinereus, capite toto cum gutture undique castaneis, gula dilutiore: abdomine medio albescente.

Long. tota 5·0, alæ 2·5, caudæ 2·0.

Hab. Caraccas in Venezuela (*Lafr.*).

Mus. Parisiensi, Heineano.

Genus XV. CYPSNAGRA.

Cypsnagra, Less. Man. d'Orn. p. 460 (1831).

Leucopygia, Sw. Class. Birds, ii. p. 285 (1837).

Rostrum tenue, arcuatum, acutum, dente finali obsoleto; gonyde vix ascendente: alæ modicæ, remigibus secunda et tertia longissimis: cauda modica rotundata: pedes robusti, unguibus acutis.

1. CYPSNAGRA RUFICOLLIS.

Tanagra ruficollis, Licht. Verz. d. Doubl. p. 30.

Tanagra hirundinacea, Less. Tr. d'Orn. p. 460.

Leucopygia ruficollis, Sw. An. in Men. p. 312; Cab. Mus. Hein. p. 137.

Tachyphonus ruficollis, d'Orb. Voy. p. 277.
Cypsnagra ruficollis, Gray, Gen. p. 167; Bp. Consp. p. 232.
Tanagra fumigata, Temm. in Mus. Lugd.

Supra niger, uropygio, speculo alari cum primariarum mediarum marginibus et tectricibus alarum majoribus (vittam formantibus) albis: subtus albus vix ochracescens, gutture ferrugineo.

Long. tota, 6·2, alæ 3·2, caudæ 2·5.

Hab. S. Brazil, Bahia (*Sw.*); Rio; S. Paolo (Licht.); Bolivia, Chiquitos (*d'Orb.*).

Genus XVI. TACHYPHONUS.

Tachyphonus, Vieill. Analyse, p. 33 (1816).
Pyrrota, Vieill. ibid. p. 45.
Comarophagus, Boie, Isis, 1826, p. 974.

Rostrum subconicum, compressum; apice incurva, acuta et dentata; commissura plus minusve sinuata et loba mediali interdum instructa: alæ modicæ, paulum rotundatæ, remigibus tertia, quarta et quinta longissimis; secunda breviore quam quinta: cauda elongata, rotundata: sexus dissimiles: ptilosis marium nigra, fœminarum brunnea.

1. TACHYPHONUS MELALEUCUS.

Oriolus melaleucus, Sparm. Mus. Carls. pl. 31 (1787).
Tanagra noir d'Amérique, Buff. Pl. Enl. 179. fig. 2 (♂).
Tanagra roux de Cayenne, ib. pl. 711 (♀).
Tanagra nigerrima, Gm. S. N. p. 899; Max. Beitr. iii. p. 534.
Tanagra rufa, Bodd. Table d. Pl. Enl. (♀).
Oriolus leucopterus, Gm. S. N. p. 392.
Tachyphonus leucopterus, Vieill. N. D. d'H. N. xxxii. p. 358; Enc. Méth. p. 803; Gal. Ois. pl. 82, p. 113; d'Orb. Voy. p. 277; Gray, Gen. p. 365.
Pyrrota leucoptera, Bp. Consp. p. 238.
Tachyphonus nigerrimus, Sw. Quart. Journ. Sc. 1826, p. 62; Lafr. et d'Orb. Syn. Av. in Mag. de Zool. 1837, p. 29; Schomb. Guian. iii. p. 669.
Tordo de bosque negro cobijas blancas, Azara, Pax. no. 76.
Tangara noir, Desm. Tan. pl. 45 (♂) et 46 (♀).
White-winged Oriole, Lath. G. H. iii. p. 125, pl. 42.
Tachyphonus beauperthuyi, Bp. Compt. Rend. xxxii. (1851), p. 82 ?.

Sericeo-ater; tectricibus alarum summis et tectricibus inferioribus albis. ♀ *rufescenti-brunnea; subtus paulo dilutior.*

Long. tota 7·0, alæ 3·4, caudæ 3·0.

Hab. Cayenne; Guiana (*Schomb.*); Venezuela; Trinidad; Tobago (*Kirk.*); Bogota (*Lewy* in Mus. Paris); Pintobamba in Peru et Goyaz in Brazil (*Cast.* et *Dev.*); Brazil; Pernambuco (*Sw.*); Bahia (*P. Max.*); Rio Grande do Sul (*Plant.*); Paraguay (*Azara*); Corrientes (*d'Orb.*).

Mus. Brit., Paris., &c.

This seems one of the most common and widely distributed species of birds in Cisandean South America. There is some variation in the length and thickness of the bill, and amount of white on the wings. Prince Bonaparte has named a Venezuelan bird exhibiting some differences in these respects, *Tachyphonus beauperthuii*, but I have not recognized that species as distinct, because I have observed such differences in specimens brought from the same locality.

2. TACHYPHONUS VALERII.

Pyrrota valeryi, J. et E. Verr. R. Z. 1855, p. 351.

Unicolor ater : campteriis item nigris.
Long. tota 2·1, alæ 4·1, caudæ 3·9.
Hab. Central America.
Mus. Paris.
I have not seen this species.

3. TACHYPHONUS LUCTUOSUS.

Tachyphonus luctuosus, Lafr. et d'Orb. Syn. Av. in Mag. de Zool. 1837, p. 29.
Pyranga luctuosa, d'Orb. Voy. p. 263, pl. 20. fig. 1 ♂. 2 ♀.
Tachyphonus tenuirostris, Gray, Gen. p. 365 ; Bp. Consp. p. 240.
Lanio tenuirostris, Gray, Gen. App. p. 16.

Ater : tectricibus alarum minoribus mediisque et tectricibus subalaribus albis. ♀ supra virescens, uropygio flavescentiore, pileo cinerascentiore : subtus flavescens, gula pallide grisea.
Long. tota 5·0, alæ 2·5, caudæ 2·1.
Hab. Bolivia (*d'Orb.*) ; Eastern Peru ; prov. Quixos in Ecuador ; Bogota ; S. Martha ; Trinidad ; Tobago (*Kirk.*).
Mus. Brit., &c.

4. TACHYPHONUS CORONATUS.

Tordo de bosque coronado y negro, Azara, Pax. no. 77.
Agelaius coronatus, Vieill. N. D. d'H. N. xxxiv. p. 535, et Enc. Méth. p. 711 (1818).
Tanagra coryphæus, Licht. Verz. p. 31 (1824).
Tachyphonus coryphæus, Gray, Gen. p. 365 ; Hartl. Ind. Az. p. 5.
Pyrrota coryphæus, Bp. Consp. p. 238.
Tachyphonus vigorsi, Sw. Quart. Journ. Sc. 1826, p. 63 ; Jard. Ill. Orn. pl. 36. fig. 1.
Tachyphonus coronatus, Sclater, Tan. Cat. Sp. p. 7.

Ater : vertice medio ruberrimo : tectricibus alarum summis et tectricibus inferioribus albis. ♀ rufescenti-brunnea ; capite magis fusco : subtus paulo dilutior.
Long. tota 7·0, alæ 3·2, caudæ 3·0.
Hab. Paraguay (*Azara*) ; South Brazil (*Sw.*).
Mus. Brit., Berol.

5. TACHYPHONUS SURINAMUS.

Merula surinamensis, Briss. Orn. Suppl. vi. p. 46.

Turdus surinamus, Linn. S. N. i. p. 297.

Tachyphonus surinamensis, Lafr. R. Z. 1846, p. 202; Bp. Compt. Rend. xxxii. p. 81.

Tanagra cristata, Gm. S. N. p. 898 (*partim*).

Tachyphonus cristatus, Vieill. N. D. d'H. N. xxxii. p. 356, et Enc. Méth. p. 802 (*partim*).

Tanagra martialis, Temm. Analyse, p. LXV.

Tanagra desmaresti, Sw. Quart. Journ. Sc. 1826, p. 67.

Tachyphonus ochropygos, Cab. Schomb. Reis. iii. p. 668.

Lanio cristata, Bp. Consp. 241 (*partim*).

Tangara huppé de la Guyane, Buff. Pl. Enl. 301. fig. 2.

Le Houpette, adulte, Desm. Tan. pl. 47.

Surinam Thrush, Lath. G. H. v. p. 150.

Sericeo-ater: tectricibus alarum minoribus et tectricibus subalaribus albis: fronte nigra: pileo medio cristato aurescenti-fulvo: dorso postico dilutiore fulvo: hypochondriis imis castaneis. ♀ supra olivacea; capite cinereo: pileo medio olivaceo: ciliis et regione oculari flavis: subtus pallide fulva, crisso flavescentiore.

Long. tota 6·0, alæ 3·5, caudæ 3·2.

Hab. Cayenne; Brit. Guiana (*Schomb.*); Guia on the Rio Negro (*Wallace*).

Mus. Brit., Paris., &c.

6. TACHYPHONUS CRISTATUS.

Tangara hupe de Cayenne, Buff. Pl. Enl. 7. fig. 2.

Tangara Cayennensis nigra cristata, Briss. Orn. Supp. p. 65.

Tanagra cristata, Gm. S. N. p. 898; Max. Beitr. iii. 474.

Tachyphonus cristatus, Vieill. Nouv. Dict. xxxii. p. 356, et Enc. Méth. p. 802 (*partim*); Sw. Quart. Journ. Sc. 1826, p. 66; Schomb. Guian. iii. 668; Gray's Gen. p. 365.

Lanio cristatus, Vieill. N. D. d'H. N. 1846, p. 203; Enc. Méth. p. 740; Lafr. R. Z. 1846, p. 203. sp. 2 et 5; Gray, Gen. p. 364; Bp. Consp. p. 240 (*partim*).

Tanagra brunnea, Spix, Av. Bras. ii. p. 37. pl. 49. fig. 2 (♀).

Tanagra gubernatrix, Temm. Tab. Méth. p. 30.

Lanio vieillotii, Lafr. R. Z. 1846, p. 204.

Houpette, jeune âge, Desm. Tan. pl. 48.

Crested Tanager, Lath. G. H. vi. p. 11.

Ater: pileo toto cristato ruberrimo: gula et dorso postico pallide fulvis: tectricibus alarum minoribus et tectricibus inferioribus albis. ♀ cinnamomescenti-brunnea, subtus dilutior.

Long. tota 6·5, alæ 3·1, caudæ 3·0.

Hab. Cayenne; Brit. Guiana (*Schomb.*); Brazil; New Grenada, Bogota.

Mus. Brit., Paris., &c.

7. TACHYPHONUS RUFIVENTER.

Tanagra rufiventer, Spix, Av. Bras. ii. p. 37. pl. 50. fig. 1.

Tachyphonus rufiventer, Strickl. Cont. Orn. 1850, p. 49. pl. 50.
Tachyphonus serrirostris, Strickl. MS.

Ater: pileo medio et uropygio flavescenti-brunneis: gulari stria et abdomine toto pallide brunneis, hoc medialiter in castaneum transeunte: tectricibus alarum superioribus et inferioribus albis.

Long. tota 6·5, alæ 3·2, caudæ 2·75.
Hab. Eastern provinces of Peru, Sarayaçu (*Cast.* et *Dev.*); Chamicurros (*Hawxwell*).

8. TACHYPHONUS DELATTRII.

Tachyphonus delattrii, Lafr. R. Z. 1847, p. 72; Gray's Gen. App. p. 17; Bp. Consp. p. 237.

Fusco-niger: crista verticali nitide fulvo-aurantia.

Long. tota 5·8, alæ 2·8, caudæ 2·5.
Hab. North-western coast of New Grenada, S. Bonaventura (*Delattre*), Gorgona (*Capt. Kellett*).
Mus. Brit. et Acad. Philadelph.

9. TACHYPHONUS PHŒNICEUS.

Tachyphonus phœniceus, Sw. An. in Men. p. 311; Gray's Gen. p. 365; Bp. Consp. p. 237.
Tachyphonus saucius, Strickl. Ann. Nat. Hist. xiii. 419.
Tanagra leucocampter. Licht. in Mus. Berol.

Chalybeo-niger: tectricibus alarum superioribus albis, rubro marginatis, inferioribus omnino albis. ♀ supra nigrescenti-brunnea, subtus clarior, cinerascens.

Long. tota 5·5, alæ 2·9, caudæ 2·6.
Hab. Interior of Brazil, Borba (*Natterer*).
Mus. Berolinensi et Vindobiensi.

10. TACHYPHONUS XANTHOPYGIUS.

Tachyphonus xanthopygius, Sclater, P. Z. S. 1854, p. 158. pl. 69 (♀), et 1855, p. 83. pl. 90 (♂).
Lanio auritus, DuBus, Bull. Ac. Brux. xxii. p. 153 (1855).

Niger: tergo flavo: fascicula post-superciliari coccinea: carpo summo dilute flavo: tectricibus subalaribus albis. ♀ nigro-cinerea, subtus dilutior, tergo flavo: carpo summo et tectricibus subalaribus albis.

Long. tota 6·1, alæ 3·5, caudæ 2·5.
Hab. New Grenada, Bogota.
Mus. Brit.

Genus XVII. TRICHOTHRAUPIS.

Trichothraupis, Cab. Mus. Hein. p. 23 (1851).

Rostrum Tachyphoni *sed haud sinuatum, basi dilatatâ, dente finali minus distincto; rictu setoso: alæ modicæ, rotundatæ,* *remigibus tertia et quarta longissimis, secunda autem quintam superante : cauda modica, rotundata.*

1. TRICHOTHRAUPIS QUADRICOLOR.

Tachyphonus quadricolor, Vieill. N. D. d'H. N. xxxii. p. 359; Enc. Méth. p. 803; Gray, Gen. p. 365; Bp. Consp. p. 237.

Lindo pardo copete amarillo, Azara, no. 101 (*unde*).

Muscicapa melanops, Vieill. N. D. d'H. N. xxi. p. 452, et Enc. Méth. p. 827.

Tanagra auricapilla, Spix, Av. Bras. ii. pl. 52. fig. 1 (♂), 2 (♀), p. 39; Max. Beitr. iii. p. 538.

Muscicapa galeata, Licht. Doubl. p. 56.

Tachyphonus suchii, Sw. Quart. Journ. Sc. 1826, p. 66.

Trichothraupis quadricolor, Cab. M. H. p. 23.

Supra brunnescenti-olivacea, pileo cristato medialiter flavo: fronte, oculorum ambitu et alis caudaque nigris: vitta alari interna rectricum basin transeunte et tectricibus subalaribus albis: subtus pallide rufescenti-fulva. ♀ *mari similis, sed crista flava et facie nigra carens.*

Long. tota 6·2; alæ 3·2, caudæ 2·9.

Hab. Brazil, Bahia (*Max.*); Rio (*Spix*); San Paolo (*Licht.*); Paraguay (*Azar.*).

Mus. Brit., Paris., Berol., &c.

Genus XVIII. EUCOMETIS.

Comarophagus, Bp. Compt. Rend. xxxii. p. 81 (nec Boié).

Rostrum Tachyphoni *sed commissura vix sinuata : alæ elongatæ, remigibus tertia, quarta et quinta longissimis : cauda elongata, rotundata : ptilosis olivacea : sexus similes.*

1. EUCOMETIS PENICILLATA.

Tanagra penicillata, Spix, Av. Bras. ii. p. 36. pl. 49. fig. 1.

Tachyphonus penicillatus, Gray, Gen. p. 365; Bp. Consp. p. 237.

Flavo-brunnescenti-olivacea, uropygio clariore : capite toto cinerascente, crista elongata, alba, cinerascente marginata : subtus saturate aurantio-flava ; gutture albo, cinereo lavato : rostro pallide corneo : pedibus brunneis.

Long. tota 7·0, alæ 3·5, caudæ 3·1.

Hab. Brazil (?) (*Spix*); Cayenne; Surinam (*Mus. Senckenb.*).

Mus. Senckenb. et P. L. S.

This seems to be the species of this curious form which has the crest most developed, and from its locality the most likely to be what Spix intended by his *Tanagra penicillata*.

I have seen several examples of it, which I have no doubt from their preparation were Cayenne skins.

2. EUCOMETIS ALBICOLLIS.

Pyranga albicollis, Lafr. et d'Orb. Syn. Av. in Mag. de Zool. 1837,

p. 33; d'Orb. Voy. p. 265. pl. 26. fig. 2; Gray, Gen. p. 264; Bp. Consp. p. 241.

Trichothraupis albicollis, Cab. Mus. Hein. p. 23 (note).

Olivacea, uropygio flavescente: capite et collo sordide griseis: gutture albo: abdomine flavo: mandibula pallida: maxilla cornea.

Hab. Bolivia, Chiquitos (*d'Orb.*).

Mus. Paris.

3. EUCOMETIS CRISTATA.

Pipilopsis cristata, DuBus, Bull. Ac. Brux. xxxii. p. 154 (1855).

Trichothraupis penicillata, Sclater, P. Z. S. 1855, p. 156.

Flavo-brunnescenti-olivacea, uropygio clariore: capite cristato toto cum gutture cineraceis, sed gula dilutiore: abdomine aurantio-flavo: rostro nigricanti-corneo, pedibus pallide brunneis.

Long. tota 7·0, alæ 3·5, caudæ 3·0.

Hab. New Grenada, S. Martha (*Verreaux*); Cartagena et Caraccas (*Mus. Paris.*); Nicaragua (Delattre).

Mus. Paris.

This bird seems to differ from the one I have called *penicillata* in its shorter crest, which is not white at the base, darker cinereous throat, rather more yellowish belly and blacker bill. In my list of Bogota birds I called it *penicillata*, not having then noticed its apparent distinctness.

Genus XIX. LANIO.

Lanio, Vieill. Analyse, p. 40 (1816).

Pogonothraupis, Cab. in Schomb. Guian. iii. p. 669 (1848).

Rostrum rectum, compressum; mandibula superiore dentata, fortiter uncinata et loba mediali instructa: alæ elongatæ, remigibus tertia et quarta longissimis: cauda elongata, rotundata: ptilosis marium aurantiaca et nigra, fœminarum brunnea.

1. LANIO ATRICAPILLUS.

Tang. jaune à tête noire, Buff. Pl. Enl. 809. fig. 2.

Tanagra atricapilla, Gm. S. N. p. 898.

Lanius aurantius, Lath. Ind. Orn. 1. p. 79 ?

Lanio atricapillus, Vieill. N. D. d'H. N. xxii. p. 305; Vieill. Enc. Méth. p. 741; Gal. Ois. pl. 138. p. 223; Gray, Gen. p. 364; Bp. Consp. Av. p. 240.

Pogonothraupis atricapilla, Cab. in Schomb. Reis. iii. p. 669.

Ferruginolento-flavus, pectore in castaneum transeunte: capite toto et cervice undique cum alis caudaque nigris: tectricibus alarum minoribus et tectricibus subalaribus albis. ♀ fusco-brunnea unicolor; subtus paulo dilutior.

Long. tota 6·8, alæ 2·7, caudæ 2·1.

Hab. Cayenne; British Guiana (*Schomb.*); New Grenada, Bogota.

Mus. Brit., Paris.

2. LANIO VERSICOLOR.

Tachyphonus versicolor, Lafr. et d'Orb. Syn. Av. in Mag. de Zool. 1837, p. 28.

Pyranga versicolor, d'Orb. Voy. p. 262. pl. 19. fig. 1.

Lanio versicolor, Lafr. R. Z. 1846, p. 203; Gray, Gen. p. 364; Bp. Consp. p. 240.

Flavus, dorso brunnescentiore: capite toto et gula cum alis caudaque nigris: tectricibus alarum superioribus omnino albis. ♀ flavo-brunnea unicolor, cauda rufescente: ventre flavescente.

Hab. Bolivia, Yuracares (*d'Orb.*).

Mus. Paris., Lafresnayano.

Obs. *Affinis* Lanioni atricapillo *sed statura minore, dorso imo et colli lateribus flavescentibus, tectricibus alarum omnino albis, et corpore subtus flavescentiore distinguendus.*

3. LANIO AURANTIUS.

Lanio aurantius, Lafr. R. Z. 1846, p. 204; Gray, Gen. App. p. 16; Bp. Consp. p. 240.

Flavissimus: capite toto cum gula et alis caudaque nigris: tectricibus alarum minoribus albis: plaga magna pectorali ferruginea. ♀ supra brunnea, uropygio flavicante: capite et collo postico ochracescentibus: gula fusca: abdomine flavo; crisso brunnescentiore: tectricibus subalaribus griseis.

Long. tota 8·0, alæ 3·9, caudæ 3·5.

Hab. Honduras (*Dyson*); S. Mexico, Orizaba (*Sallé*).

Mus. Brit., Lafresnayano.

Genus XX. PHŒNICOTHRAUPIS.

Phœnicothraupis, Cab. Mus. Hein. p. 24 (1851).

Rostrum forte, elongatum, rectum, subconicum, compressum, commissura non sinuata; dente finali distincto: alæ longæ, remigibus tertia, quarta et quinta longissimis, sexta secundam superante: cauda longa, rotundata: ptilosis marium rubra, fœminarum brunnea.

1. PHŒNICOTHRAUPIS RUBICA.

Habia roxiza, Azara, no. 85.

Saltator rubicus, Vieill. N. D. d'H. N. xiv. p. 107; Enc. Méth. p. 792; Lafr. et d'Orb. Syn. Av. in Mag. de Zool. 1837, p. 36; Gray, Gen. p. 363; Hartl. Ind. Az. p. 6.

Tanagra flammiceps, Temm. Pl. Col. 177; Max. Beitr. iii. 597.

Tanagra porphyrio, Licht. Verz. d. Doubl. p. 31.

Pyranga rubica, d'Orb. Voy. p. 265.

Phœnicothraupis rubica, Cab. Mus. Hein. p. 24: Sclater, Ann. N. H. xiv. p. 24.

Fusco-rubescens fere unicolor: cauda clariore: pileo cristato medialiter coccineo: capitis lateribus obscurioribus: rostro nigrescenti-plumbeo: pedibus pallidis. (♀) *pallide fusco-brunnea unicolor; subtus dilutior.*

Long. tota 7·2, alæ 3·9, caudæ 3·7.

Hab. South-east Brazil (*P. Max.*); Paraguay (*Azara*); Bolivia, Guarayos and Yuracares (*d'Orb.*).

Mus. Brit., &c.

2. PHŒNICOTHRAUPIS RUBRA.

Tachyphonus ruber, Vieill. N. D. d'H. N. xxxii. p. 359; Enc. Méth. p. 804.

Phœn. rubica ex ins. Trinit., Sclater, Ann. N. H. xiv., p. 24.

Fusco-rubescens; subtus clarior; abdomine et cauda roseo indutis: crista mediali coccinea: rostro fusco-plumbeo: pedibus pallide brunneis.

Long. tota 6·8, alæ 3·7, caudæ 3·0.

Hab. Trinidad.

Mus. P. L. S.

This bird is rather smaller than the South Brazilian species, and may be distinguished from it by its brighter and more rosy colouring below, shorter tail and paler feet. I have only seen specimens from the island of Trinidad.

3. PHŒNICOTHRAUPIS RUBICOIDES.

Saltator rubicoides, Lafr. R. Z. 1844, p. 41.

Phœnicothraupis rubicoides, Cab. M. H. p. 24; Sclater, Ann. N. H. xiv., p. 25.

Pyranga ignicapilla, Licht. in Mus. Berol. (♂).

Pyranga quajacina, Licht. in Mus. Berol. (♀).

Supra fusco-rubescens, cauda dorso concolore: subtus pectore toto multo clariore, ruberrimo: crista mediali verticis coccinea: rostro nigro-plumbeo: pedibus pallide brunneis. ♀ pallide fusco-brunnea, subtus dilutior, gutture pallidiore.

Long. tota 7·5, alæ 4·0, caudæ 3·75.

Hab. S. Mexico, Papantla (*Mus. Berol.*); Cordova (*Sallé*); Guatimala (*Mus. H.E.S.*); S. Martha (*Verr.*).

Mus. Brit., Berol., Lafresnayano, H.E.S.

This bird may be recognized by its tail being of the same colour as the back, not brighter, as in the Brazilian species, and the scarlet breast. My examples were collected by Signor Constancia in the vicinity of Guatimala. Specimens received by MM. Verreaux from S. Martha, New Grenada, to which I have seen the MS. name "*P. erythrolaimus*, Bp." attached, appear hardly different from the Mexican bird.

4. PHŒNICOTHRAUPIS GUTTURALIS.

Phœnicothraupis gutturalis, Sclater, Ann. N. H. xiv. (1854), p. 25.: P. Z. S. 1855, p. 156.

Niger: vertice cristato cum gutture medio coccineis: rostro pedibusque nigris.

Long. tota 7·25, alæ 3·8, caudæ 3·2.

Hab. New Grenada, Bogota.

Mus. Brit., Paris.

Since describing this species, I have seen several other specimens of it in the Paris Museum, transmitted from Bogota by M. Fontanier in 1853.

Genus XXI. Lamprotes.

Lamprotes, Sw. Class. Birds, ii. 283 (1837).
Sericossypha, Less. Echo d. M. S. 1844, p. 382.

Rostrum Orthogonydis *sed paulo fortius: alæ elongatæ, remige prima longa et vix breviore quam sequentibus: cauda breviuscula, rotundata: tarsi breves et sicut pedes robustissimi; ungues acutissimi: ptilosis aureo-nitens, marium rubro variegata, fœminarum unicolor.*

a. *Lamprotes.*

1. Lamprotes loricatus.

Tanagra loricata, Licht. Verz. d. Doubl. p. 31 (1823), (♀); Bp. Consp. p. 237.
Saltator niger, Vieill. Enc. Méth. p. 794 (jun.?).
Tanagra rubricollis, Spix, Av. Bras. ii. p. 43.
Tanagra rubrigularis, Spix, *ib.* p. 43.
Lamprotes rubrigularis, Sw. Class. ii. 283.
Lamprotes ruficollis, Gray, Gen. p. 362.
Tachyphonus loricatus, Gray, l. c.
Tanagra bonariensis, Max. Beitr. iii. 530.
Lamprotes loricatus, Sclater, Tan. Cat. Sp. p. 8.

Fulgenti-ater, gutture et jugulo medialiter rubris. ♀ unicolor atra, gutture concolore.

Long. tota 8·5, alæ 4·6, caudæ 3·0.
Hab. South-east Brazil, Bahia (*Max.*).
Mus. Brit., Paris., &c.

b. *Sericossypha.*

2. Lamprotes albicristatus.

Lamprotes albocristatus, Lafr. R. Z. 1843, p. 132; Lafr. Mag. de Zool. 1844, pl. 50; Gray, Gen. p. 362.
Sericossypha sumptuosa, Less. Echo d. M. S. 1844, p. 382; Less. Descr. d. Mamm. et Ois. p. 354.

Velutino-ater: alis caudaque æneo fulgentibus: pileo niveo: gutture et jugulo sanguinolente purpureis.

Long. tota 9·3, alæ 5·5, caudæ 4·0.
Hab. New Grenada, Bogota (*Lewy*); S. Martha (*Fontanier*).
Mus. Brit., Paris.

Some examples of this splendid bird have the throat much more red, almost scarlet. I have not yet seen the female, which would probably have the throat black.

Genus XXII. Orthogonys.

Orthogonys, Strickl. Ann. Nat. Hist. xiii. (1844), p. 421.

Cyanicterus, Bp. Consp. p. 240 (1850).

Rostrum elongatum, compressiusculum, culmine obtuse carinato et regulariter curvato; gonyde rectissima nec ascendente: alæ modicæ, remigibus secunda, tertia et quarta fere æqualibus, prima breviore quam quinta: cauda rotundata: tarsi breves.

1. ORTHOGONYS VIRIDIS.

Tanagra viridis, Spix, Av. Bras. ii. pl. 48, fig. 2.

Orthogonys viridis, Strickl. Ann. N. H. xiii. p. 421; Bp. Consp. p. 531.

Lamprotes viridis, Gray, Gen. p. 362.

Tanagra vegeta, Licht. in Mus. Berol.

(♂ et ♀ ?) *Supra olivaceo-viridis, subtus flavus, lateraliter olivascentior: rostro nigro, pedibus pallide brunneis.*

Long. tota 8·0, alæ 3·7, caudæ 3·5.

Hab. South Brazil, Rio (*Spix*).

Mus. Brit., Paris., &c.

I have seen many examples of this bird, all similar, from Brazilian collections, and therefore conclude the sexes are alike, although the colouring is what one would suppose to be that of a female bird.

2. ORTHOGONYS CYANICTERUS.

Pyranga cyanictera, Vieill. N. D. d'H. N. xxviii. p. 290 (♂ jun.); Vieill. Enc. Méth. p. 798; Vieill. Gal. Ois. pl. 81. p. 112; Gray, Gen. p. 364.

Pyranga icteropus, Vieill. N. D. d'H. N. xxviii. p. 291; Vieill. Enc. Méth. p. 799; Puch. Arch. Mus. Par. vii. p. 356.

Tachyphonus chloricterus, Vieill. N. D. d'H. N. xxxii. p. 360 (♀); et Enc. Méth. p. 804?? Puch. Arch. Mus. Par. vii. p. 379.

Tachyphone à épaulettes bleues, Less. Tr. d'Orn. p. 463 (♀); Puch. Arch. Mus. Par. vii. p. 378. pl. xxii.

Cyanicterus venustus, Bp. Consp. p. 240.

Orthogonys cyanicterus, Sclater, Tan. Cat. Sp. p. 8.

Supra læte cæruleus: infra gutture toto ad medium pectus cæruleo, abdomine flavo: rostro nigro, pedibus flavis. (♀) *supra viridis cæruleo tincta: corpore subtus cum loris et oculorum ambitu flavis: rostro pallido: pedibus flavis.*

Long. tota 7·75, alæ 3·5.

Hab. Cayenne (Poiteau, 1822, *Mus. Par.*).

Mus. Brit., Paris., Lugdunensi, Lafresnayano.

There are pairs of this singular Tanager (marked ♂ and ♀) in the Paris, British, and Leyden Musuems, but I have rarely met with it elsewhere. I consider it certainly congeneric with the Brazilian *O. viridis*. The only question is, whether that may not be the female of a corresponding brightly-coloured species. I may observe, that if the birds had not been marked as pairs in the collections above-cited, I should probably have considered the female as specifically distinct.

Genus XXIII. PYRANGA.

Pyranga, Vieill. Analyse, p. 32 (1816).
Phœnisoma, Sw. Class. Birds, ii. p. 284 (1837).

Rostrum subrectum, subconicum, cylindricum, culmine modice incurvo, apice dentata, maxilla loba mediali plerumque instructa: alæ elongatæ, remigibus quatuor primis fere æqualibus, sed secunda et tertia paulo longioribus: cauda modica, subquadrata: ptilosis marium coccinea, fœminarum flava aut flavo-virens.

1. PYRANGA RUBRA.

Tanagra rubra, Linn. S. N. i. p. 314; Wils. Am. Orn. i. pl. 11. fig. 3, 4; Aud. Orn. Biogr. iv. p. 388. et Am. Orn. pl. 354. fig. 3 ♂, 4 ♀.

Pyranga rubra, Sw. North. Zool. ii. p. 273; Aud. Syn. p. 136; Jard. Wils. Am. Orn. i. p. 192; Aud. 8vo. ed. iii. p. 226. pl. 209; Gray, Gen. p. 364; Bp. Consp. p. 241; Sclater, P. Z. S. 1855, p. 156.

Pyranga erythromelas, Vieill. N. D. d'H. N. xxviii. p. 293. et Enc. Méth. p. 800.

Phœnisoma rubra, Sw. Class. ii. p. 284.

Tangara du Mexique, Buff. Pl. Enl. 127. fig. 1 (♂).

Tangara du Canada, Buff. Pl. Enl. 156. fig. 1 (♂); Desm. Tan. pl. 34.

Red Tanager, Lath. G. H. vi. p. 5.

Coccinea, alis caudaque nigris. ♀ olivacea, subtus flavescens, alis caudaque fuscis.

Long. tota 6·7, alæ 3·8, caudæ 2·8.

Hab. North America from Texas to Lake Huron, summer migrant (*Aud., Wils.,* &c.); Texas (*Sitgreaves*); Mexico (*Bullock*); Antilles, Cuba (*d'Orb.*) (*Poey*); Jamaica (*Gosse*); New Grenada, Bogota.

Mus. Brit., Paris., &c.

2. PYRANGA ÆSTIVA.

Muscicapa rubra, Linn. S. N. i. p. 326?

Tanagra æstiva, Gm. S. N. 889; Wils. Am. Orn. pl. 6. fig. 3; Aud. Orn. Biogr. i. p. 232. et Am. Orn. pl. 44. ♂ et ♀.

Loxia virginica, Gm. S. N. i. p. 849 (?).

Tanagra variegata, Lath. Ind. Orn. i. p. 421 (♂ juv.).

Tanagra mississipiensis, Gm. S. N. i. p. 889.

Pyranga æstiva, Vieill. N. D. d'H. N. xxviii. p. 291. et Enc. Méth. p. 799; Aud. Syn. p. 136; Jard. Wils. Orn. i. p. 95; Aud. 8vo. ed. iii. p. 222. pl. 268; Bp. P. Z. S. 1837, p. 117; Gray, Gen. p. 364; Bp. Consp. p. 241; Sclater, P. Z. S. 1855, p. 156.

Phœnisoma æstiva, Sw. Class. ii. p. 284.

Tangara de Mississippi, Buff. Pl. Enl. 741; Desm. Tan. pl. 32 et 33.

Summer Tanager, Lath. G. H. vi. p. 8.

Rosaceo-coccinea, dorso toto paulo obscuriore; rostro pallide *corneo, tomiis et apice pallescentibus.* ♀ *olivacea, subtus flavescentior.*

Long. tota 6·5, alæ 3·8, caudæ 2·8.

Hab. North America, from Texas to Massachussetts, and in the interior to Canada (*Aud.*, &c.); Texas (*Sitgreaves*); Mexico, Cordova (*Sallé*); Guatimala (*Constancia*), (*Bp.*); Antilles, Cuba (*de la Sagra*), (*Poey*); Jamaica (*Gosse*); Chiriqui (*Bridges*); New Grenada, Bogota.

Mus. Brit., Paris., &c.

3. PYRANGA SAIRA.

Habia punzó, Azara, Pax. no. 88 (*unde*),

Saltator ruber, Vieill. Enc. Méth. p. 793 (♂).

Habia amarilla, Azara, Pax. no. 87 (*unde*),

Saltator flavus, Vieill. Enc. Méth. p. 791 (♀).

Tanagra mississipiensis, Licht. Verz. d. Doubl. p. 30; P. Max. Beitr. iii. p. 521.

Tanagra saira, Spix, Av. Bras. ii. pl. 48. fig. 1.

Pyranga mississipiensis, Lafr. et d'Orb. Syn. Av. in Mag. de Zool. 1837, p. 31.

Pyranga azaræ, d'Orb. Voy. p. 264; Bp. Consp. p. 241; Gray, Gen. p. 364.

Phœnisoma azaræ, Tsch. F. P. p. 206; Schomb. Reise, iii. p. 668; Cab. Mus. Hein. p. 25.

Rubro-coccinea, dorso toto et cauda obscurioribus: rostro cyanescenti-plumbeo, tomiis pallidioribus: pedibus nigris. ♀ *flavescenti-olivacea: superciliis et corpore subtus flavis.*

Long. tota 8·0, alæ 3·9, caudæ 2·9.

Hab. British Guiana (*Schomb.*); Brazil; Rio; Bahia and Minas (*Max.*); S. Paolo (*Licht.*); Paraguay (*Azar.*); Bolivia (*d'Orb.*); Buenos Ayres (*d'Orb.*); East Peru (*Tsch.*).

Mus. Berol., Brit., &c.

This bird is clearly distinct from the North American *P. æstiva* upon an accurate comparison. It is of quite a different red, being much brighter; the bill is larger and of a dark plumbeous, not horn colour, and the feet are nearly black.

As I find that Spix's *T. saira,* of which I have seen the type at Munich, is the female of this bird, I have thought it right to use that name for it, as first given, instead of the usually adopted *azaræ.*

4. PYRANGA HEPATICA.

Pyranga hepatica, Sw. Phil. Mag. 1827, p. 438.

Phœnisoma hepaticum, Cab. Mus. Hein. p. 25.

Pyranga dentata, Licht. in Mus. Berol.

Pyranga azaræ, Sitgreaves' Rep. Exp. p. 82?

Supra cinerascenti-rubra; capite summo et corpore subtus coccineis, lateribus cinerascentibus: rostro nigro-plumbeo, pedibus nigro-brunneis. ♀ *olivacea: pileo flavescentiore: subtus flava, lateraliter olivascens.*

Long. tota 8·0, alæ 4·1, caudæ 3·0.

Hab. Mexico, Real del Monte (*Bullock*); Orizaba (*Botteri*).

This Mexican species is quite different from the *saira* and *æstiva*, being larger in size and greyish-red above. I have never observed it except in collections from Mexico. I think the *P. azaræ*, noticed in Sitgreaves' 'Report of the Zuni and Colorado Rivers Expedition,' is very likely to be this bird, as the *saira* (*azaræ*) does not range nearly so far north.

5. PYRANGA LUDOVICIANA.

Tanagra ludoviciana, Wils. Am. Orn. pl. 20. fig. 1; Aud. Orn. Biogr. iv. p. 385. et v. p. 90; Am. Orn. pl. 354. fig. 1. 2 (♂), et 400. fig. 4 (♀).

Pyranga ludoviciana, Bp. P. Z. S. 1837, p. 117; Aud. Syn. p. 137. et Am. Orn. 8vo. ed. iii. pl. 210. p. 231; Gray, Gen. p. 364; Bp. Consp. p. 241.

Tanagra columbiana, Jard. Wils. i. p. 317.

Pyranga erythropis, Vieill. N. D. d'H. N. xxviii. p. 291. et Enc. Méth. 799.

Flava, interscapulio, alis et cauda nigris: alis flavo et flavicanti-albo bivittatis: capite et gutture undique coccineo indutis. ♀ olivacea, subtus flava, alarum vittis et secundariorum margine externa apicali albis.

Long. tota 6·7, alæ 3·9, caudæ 2·9.

Hab. North America, Platte river and Columbia river (*Aud.*); Mexico, Orizaba (*Botteri*); Guatimala (*Constancia*) (*Bp.*); San Blas (*Kellett*).

Mus. Brit., Derbiano.

6. PYRANGA ERYTHROCEPHALA.

Spermagra erythrocephala, Sw. Phil. Mag. 1827, p. 437.

Pyranga cucullata, Du Bus, Bull. Ac. Brux. xiv. pt. 2. p. 105 (1847); R. Z. 1848, p. 245; Bp. Consp. p. 241; Gray, Gen. App. p. 16.

Pyranga erythrocephala, Bp. R. Z. 1851, p. 178. et Note s. l. Tang. p. 29.

Olivaceo-viridis, subtus flavescens: capite toto et gula coccineis: maxilla medialiter non dentata.

Long. tota 6·0, alæ 3·0, caudæ 2·7.

Hab. Mexico, Temiscaltipec (*Bullock*).

Mus. Derbiano.

7. PYRANGA RUBRICEPS.

Pyranga rubriceps, Gray, Gen. p. 364. pl. 89; Bp. R. Z. 1851, p. 178. et Note s. l. Tang. p. 29; Sclater, P. Z. S. 1855, p. 156.

Pyranga erythrocephala, Gray, Gen. App. p. 16 (err.); Bp. Consp. p. 241.

Pyranga pyrrhocephala, Massena, MS.

Supra olivacea; alis caudaque nigris, cauda et secundariis *olivaceo limbatis: tectricibus superioribus flavis: capite toto cum cervice undique et pectore coccineis: abdomine flavo.*

Long. tota 6·7, alæ 3·7, caudæ 3·0.

Hab. New Grenada, Bogota.

Mus. Brit., Paris.

8. PYRANGA ERYTHROMELANA.

Tanagra erythromelas, Licht. Preis-Verz. d. Saüg. u. Vög. no. 69 (1831).

Pyranga leucoptera, Trudeau, Journ. Phil. viii. 160. 1837; Bp. Consp. p. 241.

Pyranga bivittata, Lafr. R. Z. 1842, p. 70; Gray, Gen. p. 364.

Coccinea: fronte et lateribus capitis cum mento summo alis caudaque nigris: interscapulio partim nigro: alis albo bivittatis. ♀ flavo-olivascens, subtus flava, alis et cauda nigris: illis albo bivittatis.

Long. tota 5·7, alæ 2·9, caudæ 2·2.

Hab. South Mexico, Lagunas (*Deppe*, in Mus. Berol.); Orizaba (*Botteri*, in Mus. Brit.); Xalapa (*Cab.*); Cordova (*Sallé*); Guatimala (*Constancia*, in Mus. H. E. S.).

Mus. Brit. Berolinensi.

9. PYRANGA ARDENS.

Phœnisoma ardens, Tsch. Wiegm. Arch. 1844, p. 207.

Phœnisoma bivittatum, Tsch. F. P. p. 207; Cab. Mus. Hein. p. 24.

Pyranga erythromelas, Sclater, P. Z. S. 1855, p. 156.

Coccineus: loris, alis et cauda nigris: alis albo bivittatis. ♀ flavo-olivascens, subtus flava: alis (albo bivittatis) et cauda nigris.

Long. tota 5·7, alæ 3·0, caudæ 2·4.

Hab. New Grenada, Bogota; Venezuela, Cariana near Cariaca (*Dyson*); north-east wood-region of Peru (*Tsch.*).

Mus. Brit., Paris., Derbiano, &c.

This South American bird has not the black front and chin of the Mexican *P. erythromelana*, with which it is generally united, and has less appearances of black between the wings. If these differences are constant, as they appear to be in all the specimens which I have access to at present, the two species may be rightly regarded as distinct.

Lafresnaye gives no locality for his *P. bivittata*, but his description is rather more applicable to the Mexican bird, and Tschudi's '*ardens*' seems the only term left for the South American form.

10. PYRANGA BIDENTATA.

Pyranga bidentata, Sw. Phil. Mag. 1827, p. 428; Gray, Gen. p. 364; Bp. Consp. p. 241.

Pyranga sanguinolenta, Lafr. R. Z. 1839, p. 97; Gray, Gen. p. 364; Bp. Consp. p. 241.

Phœnisoma bidentatum, Cab. Mus. Hein. p. 24.

Dilute coccinea: interscapulio pallide flavescenti-brunneo, nigro variegato: secundariorum et tectricum alarium apicibus albo maculatis, his maculis sanguineo tinctis.
Long. tota 7·5, alæ 3·75, caudæ 3·25.
Hab. Mexico, Temiscaltepec (*Bullock*); Xalapa (*Mus. Berol.*).
Mus. Berol., Eytoni.

Genus XXIV. RAMPHOCELUS.

Ramphocelus, Desm. Tang. et Man. p. 5 (1805).
Ramphopis, Vieill. Analyse, p. 32 (1816).
Jacapa, Bp. R. Z. 1851, p. 178.

Rostrum subbreve, mandibulæ inferioris basi dilatata et quasi quadriformi: alæ breves, remigibus tertia, quarta et quinta longissimis: cauda rotundata: ptilosis marium velutino-coccinea aut purpurea, fœminarum brunnea, aut olivaceo-flava.

a. *Ramphocelus.*

1. RAMPHOCELUS BRASILIUS.

Tanagra brasilia, Linn. S. N. i. p. 314; Max. Beitr. iii. 515; Du Bois, Orn. Gal. pl. 124.
Ramphocelus coccineus, Vieill. Enc. Méth. p. 796. et Gal. Ois. pl. 79.
Ramphopis coccinea, Sw. Orn. Dr. pl. 18 (♂). 9 (♀).
Ramphopis brasilia, Gray, Gen. p. 363.
Ramphocelus brasilius, Bp. Consp. p. 242.
Tangara du Mexique appellée Cardinal, Buff. Pl. Enl. 127. fig. 1. ♂ (*fig. pess.*).
Ramphocele scarlatte, Desm. Tan. pl. 28 (♂). 29 (♀).
Brazilian Tanager, Lath. G. H. vi. p. 3.

Velutino-coccineus; alis, caudaque et tibiis nigris; rostro nigro-plumbeo, mandibulæ inferioris basi alba. ♀ *fusco-brunnea; uropygio et abdomine erubescenti-brunneis.*
Long. tota 7·5, alæ 3·2, caudæ 3·2.
Hab. South-east Brazil; Rio; Bahia, common (*P. Max.*).
Mus. Brit., Paris., &c.

2. RAMPHOCELUS DORSALIS.

Ramphocelus dorsalis, Bp. MS.; Sclater, P. Z. S. 1854, p. 97.

Coccineus: dorso inter alas obscuriore: alis caudaque nigris: tibiis brunneis: rostro nigro-plumbeo, mandibulæ inferioris basi alba. ♀ *fusco-brunnea: uropygio et abdomine erubescenti-brunneis.*
Long. tota 7·5, alæ 3·2, caudæ 3·2.
Hab. South-east Brazil, Rio and Pernambuco (*J. Verreaux*).

The characters that separate this species from the last are certainly slight, but I think it is very possible that they may be really distinct.

3. RAMPHOCELUS NIGRIGULARIS.

Tanagra nigrogularis, Spix, Av. Bras. ii. pl. 47. p. 35.

Tanagra ignescens, Less. Cent. Zool. pl. 24.

Ramphopis nigrigularis, Sw. Orn. Dr. pl. 17; Gray, Gen. p. 363.

Ramphocelus nigrigularis, Bp. P. Z. S. 1837, p. 121 ; Bp. Consp. p. 242.

Coccineus: regione oculari cum gula summa, interscapulio, alis caudaque, et ventre medio cum crissi dimidio inferiore sericeo-aterrimis: rostro nigro-plumbeo, mandibulæ inferioris basi alba. ♀ mari similis sed valde obscurior et colore nigro brunnescente.

Long. tota 6·7, alæ 3·2, caudæ 3·0.

Hab. Upper Amazon (*Spix*) ; Barra do Rio Negro (*Wallace*) ; Sarayaçu on the Ucayali (*Hawxwell*).

Mus. Brit., Paris., &c.

b. *Jacapa.*

4. RAMPHOCELUS JACAPA.

Tanagra jacapa, Linn. S. N. i. p. 313.

Le bec d'argent, Buff. H. N. iv. p. 259.

Tang. pourpré de Cayenne, Buff. Pl. Enl. 128. fig. 1 et 2.

Tanagra albirostris, Bodd. Tabl. d. Pl. Enl.

Ramphocelus purpureus, Vieill. Enc. Méth. p. 796.

Ramphopis atrococcineus, Sw. Orn. Dr. pl. 20 ; Schomb. Reise, iii. 668.

Ramphocelus jacapa, Less. R. Z. 1840, p. 132; Bp. Consp. p. 241.

Ramphopis jacapa, Gray, Gen. p. 363. sp. 1.

Ramphocele bec d'argent, Desm. Tan. pl. 30 (♂). 31 (♀).

Red-breasted Tanager, Lath. G. H. vi. p. 2 ; Edwards, Glean. pl. 267.

Sericeo-ater, capite toto et corpore subtus sanguinolente purpurascentibus: dorso eodem colore tincto: ventre crissoque obscurioribus: alis caudaque nigerrimis brunneo tinctis: rostro et pedibus nigris: mandibulæ inferioris basi argentescenti-plumbea. ♀ fusco-brunnea, alis caudaque obscurioribus: uropygio et corpore subtus erubescentibus: rostro toto brunnescenti-corneo.

Long. tota 6·5, alæ 3·1, caudæ 2·9.

Hab. British Guiana (*Schomb.*) ; Lower Amazon (*Wallace*) ; Cayenne.

Mus. Brit., &c.

5. RAMPHOCELUS UNICOLOR, sp. nov.

Sanguinolente purpurascens fere unicolor: alis caudaque nigris brunneo tinctis: rostro nigro, mandibulæ inferioris basi plumbea: pedibus nigerrimis.

Long. tota 6·0, alæ 3·1, caudæ 2·9.

Hab. New Grenada, Bogota.

Mus. Brit. & P. L. S.

I have two Bogota skins of this bird. It comes very close to *R. jacapa*, of which it is doubtless the New Grenadian representative. But it is of the same dark sanguineous purple above as below, while *R. jacapa* has the back almost black, just glossed with that colour. Its bill is of the same size as in the *jacapa*, but the base of the lower mandible is not so bright.

6. RAMPHOCELUS MAGNIROSTRIS.

Ramphocelus magnirostris, Lafr. R. Z. 1853, p. 243.

Similis R. jacapæ, *sed crassitie paulo majore, rostro majore, longiore, et colore pectoris clariore differt.*

Hab. Trinidad.

Mus. Brit.

I have seen many examples of this bird from the island of Trinidad. It certainly seems to have the beak always larger than the Cayenne bird, but this feature varies a little, some individuals being particularly remarkable for the size of the beak. The breast is also rather brighter than in *R. jacapa*.

7. RAMPHOCELUS VENEZUELENSIS.

Ramphocelus venezuelensis, Lafr. R. Z. 1853, p. 243.

Valde affinis R. jacapæ, *sed pileo, collo, dorso uropygioque totis nigro-granatinis, et subtus rubedine paulo intensiore: media parte abdominis nigra: mandibula inferiore breviore, retro minus producta: nigredine alarum et caudæ intensiore.*

Hab. Venezuela (*Lafr.*).

Mus. Lafresnayano.

I have not yet seen any bird answering to this description of M. de Lafresnaye.

8. RAMPHOCELUS DIMIDIATUS.

Ramphocelus dimidiatus, Lafr. Mag. de Zool. 1837, pl. 81; Bp. Consp. p. 242; Sclater, P. Z. S. 1855, p. 156.

Ramphopis melanogaster, Sw. Am. in Men. p. 359.

Ramphopis dimidiatus, Gray, Gen. p. 363.

Corpore supra ad dorsum medium et gutture cerviceque antica obscure coccineis, pennis subtus nigricantibus: dorso imo et abdomine coccineis, dorso clariore; ventre medio tibiisque nigris: alis caudaque nigricantibus: rostro nigricanti-plumbeo, sed basi argentescenti-alba. ♀ obscurior, capite toto et gutture nigricanti-fuscis, interscapulio erubescente: tergo et abdomine brunnescenti-coccineis: alis caudaque fuscis.

Long. tota 6·5, alæ 3·2, caudæ 3·0.

Hab. Carthagena (*Mus. Paris*); New Grenada, S. Martha (*Fontanier*); Bogota; Chiriqui (*Bridges*); Nicaragua (*Delattre*).

Mus. Brit.

9. RAMPHOCELUS LUCIANI.

Ramphocelus luciani, Lafr. R. Z. 1838, p. 54; Mag. de Zool. 1839, pl. 2; Bp. Consp. p. 242.

Ramphopis luciani, Gray, Gen. p. 363.

Similis R. dimidiato, *sed dorso superiore atro: capite purpurascentiore nigro.*

Hab. Carthagena (*Lafr.*).

Mus. Lafresnayano.

I am not well acquainted with this bird, having seen only one example, and that several years ago, in the collection of Baron de Lafresnaye.

10. RAMPHOCELUS UROPYGIALIS.

Ramphocelus affinis, Less. R. Z. 1840, p. 1 et 133?; Bp. Consp. p. 242.

Ramphopis affinis, Gray, Gen. p. 363. sp. 4.

Ramphocelus uropygialis, Bp. R. Z. 1851, p. 178; Note s. l. Tang. p. 29.

Velutino-niger, dorso medio coccineo tincto: cervice et pectore antico obscure coccineis, pennis subtus nigris: uropygio, abdomine laterali et crisso viride coccineis, ventre medio et tibiis nigerrimis: alis caudaque fusco-nigris; rostro nigro, basi argentescenti-plumbea: pedibus nigris.

Long. tota 6·8, alæ 3·3, caudæ 3·1.

Hab. Guatimala.

I have in my care at present the type of *R. uropygialis*. It is the property of Mr. Edward Wilson, and will eventually, I believe, go to the Museum of the Academy of Natural Sciences at Philadelphia. I have never seen a second specimen.

11. RAMPHOCELUS ATRISERICEUS.

Ramphocelus atrisericeus, Lafr. et d'Orb. Mag. de Zool. 1837, p. 34; d'Orb. Voy. p. 280. pl. 26. fig. 1; Tsch. F. P. p. 206; Bp. Consp. p. 242.

Ramphopis atrisericeus, Gray, Gen. p. 363.

Ramphocelus aterrimus, Lafr. R. Z. 1853, p. 244 (avis junr.).

Sericeo-aterrimus: capite supra ad nucham et lateribus obscure purpureis: mento, gula et pectore antico coccineis. Junr. *nigerrimus unicolor.*

Long. tota 6·5, alæ 3·1, caudæ 3·0.

Hab. Bolivia (*d'Orb.*); East Peru (*Tsch.*).

Mus. Brit., Paris.

I have seen several specimens, clearly showing by their intermediate plumage that Lafresnaye's *R. aterrimus* is nothing more than the present bird in its immature state.

12. RAMPHOCELUS PASSERINII.

Ramphocelus passerinii, Bp. L'Antologia, 1831, no. 130; Less. R. Z. 1840, p. 133 (excl. syn.); Bp. Consp. p. 242.

Ramphopis passerinii, Bp. Notes Orn. p. 52.

Ramphopis flammigerus, Baird, Stansbury's Exp. to Gt. Salt Lake, App. p. 36?

Velutino-niger: dorso postico toto rubro-coccineo. ♀ flavo-brunneo-olivascens; dorso postico brunnescenti-flavo: capite toto et gula fuscis: alis intus et cauda nigricantibus.

Long. tota 6·3, alæ 3·1, caudæ 2·7.

Hab. Colombia river, Oregon (*Baird*); Mexico, Guatimala, Nicaragua (*Delattre*); Chiriqui (*Bridges*).

Mus. Paris.

This species may be at once distinguished from *R. flammigerus*, with which it has been generally confounded, by its smaller size.

13. RAMPHOCELUS FLAMMIGERUS.

Ramphopis flammigerus, Jard. and Selb. Ill. Orn. pl. 131; Sclater, P. Z. S. 1855, p. 156.

Ramphocelus varians, Lafr. R. Z. 1847, p. 216 (*partim*).

Velutino-niger: dorso postico toto ruberrimo.

Hab. New Grenada, Caly (*Delattre*); Bogota.

14. RAMPHOCELUS CHRYSONOTUS.

Ramphocelus varians, Lafr. R. Z. 1847, p. 216 (*partim*).

Ramphocelus chrysonotus, Lafr. R. Z. 1853, p. 246; Sclater, P. Z. S. 1855, p. 156.

Ramphocelus aurinotus, Sclater, Tan. Cat. Sp. p. 9 (err.).

Velutino-niger: dorso postico toto aurantiaco-flavo.

Hab. New Grenada, Juntas (*Delattre*).

Mus. Acad. Philadelph.

This orange-rumped bird is scarcer than the other two species, *R. flammigerus* and *icteronotus*, which it so closely resembles; and I have some doubts as to its real distinctness from the former.

15. RAMPHOCELUS ICTERONOTUS.

Ramphocelus icteronotus, Bp. R. Z. 1838, p. 8; P. Z. S. 1837, p. 121; Sclater, P. Z. S. 1855, p. 156.

Ramphopis icteronotus, Gray, Gen. p. 363; Dubus, Esq. Orn. pl. 15. ♂ & ♀.

Ramphocelus varians, Lafr. R. Z. 1847, p. 216 (*partim*).

Velutino-niger: dorso postico toto flavissimo. ♀ pileo, cervice, interscapulio, campteriis et alarum tectricibus minoribus flavo-olivaceis: alis caudaque obscure fuscis, illarum tectricibus mediis et secundariis flavo-olivascente marginatis: rostri ambitu sordide fuscescenti-flavo: corpore subtus flavo.

Long. tota 6·8, alæ 3·6, caudæ 3·0.

Hab. New Grenada, western coast, S. Bonaventura (*Delattre*), Choco Bay (*Capt. Kellett*); Guyaquil (*Dubus*); Ecuador, western slope of the Andes, near Quito (*Jameson*).

Mus. Brit., Paris., &c.

16. **Ramphocelus sanguinolentus.**

Tanagra (*Tachyphonus*) *sanguinolentus*, Less. Cent. Zool. p. 107, pl. 39.

Tachyphonus sanguinolentus, Gray, Gen. p. 365.

Ramphocelus sanguinolentus, Bp. Consp. p. 242.

Velutino-ater: pileo postico, nucha cum cervice laterali et pectore conjunctis necnon tectricibus subalaribus et uropygio crissoque coccineis: rostro albo: pedibus nigris. ♀ mari similis, sed coloribus obscuribus.

Long. tota 7·5, alæ 3·7, caudæ 3·3.

Hab. South Mexico, Valle Real (*Deppe* in Mus. Berol.); Cordova (*Sallé*); Coban (*Delattre*, in Mus. Derb.); Honduras, Camalacan river, near Truxillo (*Dyson*).

Mus. Brit., Derbiano.

3. Some remarks on Crustacea of the genus Lithodes, with a brief description of a Species apparently hitherto unrecorded. By Adam White.

(Annulosa, Pl. XLII.)

Having laid before the Society a description of the interesting *Lithodes* (*Echidnocerus*) *cibarius*, of which a very excellent figure is published in the Proceedings for 1848, drawn by the late W. Wing, F.L.S., I conceive that a brief account of another very curious *Lithodes*, of which a notice was given at a meeting of the Linnean Society, may not be without interest to some of the members.

The group *Lithodes*, founded by Latreille upon our well-known, though not very common, spine-covered, empty-bodied *Lithodes Maia*, begins now to become better known. Of the excellent figure of this type of the genus, published by Dr. Leach in his 'Malacostraca Britannica,' it is sufficient to say that it was drawn and engraved by the late James Sowerby, F.L.S., and coloured from his pattern.

A very young specimen, procured by R. McAndrew, Esq., F.R.S., during his late Norwegian cruise, shows that in the young state the asperities are rather sharper, and the carapace is decidedly longer in comparison with its breadth, than in the adult state; the arrested development of the pieces forming the tail is characteristic in the adult as it is in the young specimen, 1 inch long, dredged by Mr. Barrett, and presented by Mr. McAndrew to the Museum.

Seba (vol. iii. pl. 22. f. 1) has figured a specimen with longer and more divergent terminal horns to the rostrum. As a bad specimen exists of this variety in the Paris Museum, Prof. Milne-Edwards fancies, and with good reason too, that it may prove a distinct species; he has provisionally named it *Lithode douteuse* (Crust. ii. 186); at all events, it is a variety which research may find in this country, for different specimens differ in their degrees of divergence in the horns of the rostrum.

Haan, in his 'Fauna Japonica,' 217. t. 47, has figured the male of *Lithodes Camschatica*, a species first described as *Maia Camschatica* by Tilesius in the 'St. Petersburg Memoirs,' v. p. 336. pl. 5. & 6, the female (1812). This species is named by the Chinese *Sima-gani*—that is, the Insular Crab.

Tilesius tells us that it is found on the shore of Kamschatka, among the rocks, where it conceals itself and keeps sedentary, living upon cuttle fish (*Sepia octopodia*), and snaring Starfishes and Mollusca. He records that this *Lithodes* fixes itself so firmly and resolutely in a hole of a rock, that you could not draw it out without breaking its shell. He compares the tenacity with which the Lithodes is held in the hollow of the rock to the fixedness of the *Echinus mammillaris*.

The same learned naturalist has figured another large species from Japan (218. t. 48) as the *Lithodes hystrix*; it is one which Siebold, in his 'Spicilegia,' p. 15, had only ventured to regard as the common *L. Maia* (*Lithodes arctica*, Lam., Sieb.). The *L. hystrix*, Haan, is a beautifully distinct species very thickly covered with sharp spines, named by the Japanese, *Jeara-gani*, the prickly crab, or *Aka-onigani*, the Devil's red-crab.

This list completed the number of the group found in the northern hemisphere, up to the publication of *L.* (*Echidnocerus*) *cibarius*, before alluded to. The species to be described in this paper was found by Mr. Lobb cast ashore after a violent storm on the coast of California; and as it has some peculiarities of structure in its legs, antennæ, carapace and abdomen, distinguishing it from any other, it may be named *Lithodes* (*Petalocerus*), from the beautiful petal-like lobes of the antennæ. Before describing it, it may be well to review the species of *Lithodes* found in the southern hemisphere.

Messrs. Hombron and Jacquinot, on D'Urville's 'Voyage au Pole Sud,' discovered a fine species which they named *Lithodes antarctica*, pl. 7–8. f. 9, jun. Dana, too, has described and figured this in the 'Crustacea of the United States Exploring Expedition,' i. 427. pl. 26. f. 15. ♀. He found it at Nassau Bay in Fuegia, where he tells us it grows to a very large size; the exuviæ of one, obtained by Mr. Dana, were 8 inches long, and the longest legs were 15 inches in length. He describes the species as abundant in water 6 or 7 feet deep, "where it is observed to creep along the bottom with sluggish motion; they have no legs or appendages fitted for swimming. Colour, dark cherry-red, the carapace with a slight purplish tinge. The long spines that cover the carapace and legs are longest proportionally in small individuals; the right hand is much the stoutest, the second basal joint of outer antennæ with a single longish spine on the outer side" (*loc. cit.* i. p. 428).

We hope that Mr. Despard and his noble band, who are now, or will shortly be, in these seas, will find this and the other, and perhaps new, Fuegian species. Specimens of the young are sometimes found in the stomachs of fishes, as in the case of the half-digested *Lithodes Maia* sent to Dr. Leach by the late Dr. Patrick Neill, and now in the British Museum. It would be well to keep some specimens like this.

Gay in his 'Chili' mentions it (iii. 182) as a native of Chili.

The *Lithodes granulosa*, Hombron and Jacquinot, 'Voy. au Pole Sud,' pl. 8. f. 15, has the beak scarcely projecting at all beyond the extra-orbital angle, the carapace and upper parts of its legs are thickly invested, as in some of the *Canceridæ*, with close strawberry-surfaced granules, closely pressed together. It is a small species, evidently very distinct from *Lithodes* and more allied to *Lomis*—it may be called *Paralomis granulosa*. We have it in the British Museum. The figure in the 'Voyage au Pole Sud,' is extremely bad, not at all giving correctly the surface of the carapace and legs, which are *closely* matted with the warts.

Messrs. Edwards and Lucas have published the description of a fine species, said to come from the Southern Pacific, in the Archives du Museum, ii. 465. pl. 24–27, and given ample details of it. It is named, from its short legs, *Lithodes brevipes*; its beak is short. In the British Museum we have a specimen.

The *Lithodes verrucosa*, Dana (pl. 26. f. 16. vol. i. pl. 428), was found by that able and active naturalist in Fuegia. The carapace is verrucose throughout.

The *Lomis hirta* of M. Edwards, founded on the *Porcellana hirta* of Lamarck (Anim. s. vert. v. 229), is an interesting generic form, to which Lichtenstein, in one of his catalogues, had applied the name *Thylacurus*. De Haan, who quotes this, has figured a second species in his 'Fauna Japonica' (219. t. 48. f. 2. & t. Q), under the name *Lomis dentata*:—"tota tomentosa, setis brevibus densis; thoracis margine medio 8-spinoso, pedibus secundis, tertiis et quartis margine antico 15-spinosis, spinis cristam subcontinuam formantibus."

Lomis hirta is abundant on the coast of Tasmania.

LITHODES (PETALOCERUS) BELLIANUS. (Pl. XLII.)

The first feature of the curious crab here figured is the strawberry-like surface of its carapace, and of the blunt spines with which its legs are covered; the next feature is the subequilateral triangular figure of that carapace; this part is produced above the eyes into a notched projection, with two slight prominences down the middle; this covers up the front part of the head, and conceals a wart-covered spine above the base of the pedicels of the eye, which pedicels are spiny above. The carapace has 3 spines on each side, and 2 tubercles; the first spine is directed forwards, and has one or two indistinct spinelets at its base, the second and third are separated from the first by a considerable sinus, and are near each other; they are directed laterally, but slightly inclined forwards like the other two, and indeed like the whole of the carapace and the spines on the legs; they are covered with the close warting so characteristic of this species; the two tubercles on the lateral border, but at its end are united at the base; the anterior is the larger; the hind part of carapace is straight, bending round towards these tubercles and thickened on the edges, one of its monticuli being connected with the hindmost lateral tubercle; the stomach, genital, and cardiac regions are covered by a projecting portion occupying a considerable part of the back of the carapace and raised above it; this projecting part is environed by a somewhat lyre-shaped wall, pinched in front on the sides and somewhat notched behind with two deep fossæ placed transversely and connected by a short canal, the base of which is smooth with only a few groups of warts.

The abdomen is very regular and complete for the group, and when additional specimens will admit of its being dissected, its structure promises to be curious; the various parts of it are hardly perceptible in the individual examined; a tolerably regular series of strange, close-placed appendages on its edges, seem, on cursory observation, very curious: there are about 12 deepish fossæ over it, the 2 deepest in the basal portion close to back part of carapace, and almost at right angles to the rest of abdomen, 3 on each side diverging into smaller fossulæ towards the edges, and four down the centre. The figures, drawn by Mr. Westwood from the specimen, before it came into Mr. Bell's possession, show as much as can be shown without injuring the rare example.

I exhibited a drawing of this crab at a meeting of the Linnean Society some two years ago, and not having the specimen by me, concluded, as Mr. Westwood's drawing showed it, that there were no visible traces of the imperfectly developed leg-appendages, so prominent in some species of *Lithodes*. A subsequent examination of the specimen kindly sent me by Prof. Bell has shown me I was mistaken; and on removing the carapace, which Mr. Westwood did, they are to be seen concealed as represented in the figure. There is, however, no outward opening.

This fine species is named *Lithodes* (*Petalocerus*) *Bellianus* in compliment to the ablest of our British carcinologists, the learned and scientific President of the Linnean Society, Professor Thomas Bell; in whose fine collection it is preserved. It is to him I am indebted for the loan of the specimen.

The plate represents—

1. *Lithodes* (*Petalocerus*) *Bellianus*, of the natural size, viewed from above.
2. The same from beneath, showing the pitted abdomen.
3. Rough sketch of carapace in profile.
4. Profile view of rostrum, with eyes, antennæ, &c.
5. Outer antennæ with petaloid processes.
6. Inner antennæ.
7. Hind pair of legs, concealed under the carapace.
8. Jaw feet.

May 27, 1856.

Dr. Gray, F.R.S., in the Chair.

Mr. Gould brought under the notice of the Meeting a portion of the Birds collected by Mr. John MacGillivray, the naturalist attached to H.M. Surveying ship Rattlesnake, and lately sent home by Capt. Denham, the Commander of the Expedition. They were obtained on the Fijis, San Cristoval, Isle of Pines, and other islands.

Perhaps the most remarkable of these birds is a species of *Centropus*, which exceeds in size every other member of the genus Mr. Gould has yet seen. The single specimen sent home is not fully adult, as is evidenced by some freshly moulted feathers of the tail and wings differing in colour from the older ones. On account of its large and robust form, Mr. Gould proposes to call this species

CENTROPUS MILO.

Head, neck, mantle and breast tawny-white, remainder of the plumage mottled brown and green; some of the feathers being brown indistinctly banded with green, while others are entirely green, the mottled hue being that of immaturity, and the green the adult livery: bill black.

Total length, 26½ inches; bill, 2½ inches long by 1½ deep at the base; wing, 10¾; tail, 14½; tarsi, 3.

Hab. Guadalcanar Island.

Remark.—The specimen is a male. Unlike the other members of the genus, this species has bare orbits, with the colouring of which Mr. Gould is not acquainted.

For a fine species of Fruit-eating Pigeon from the Isle of Pines, Mr. Gould proposed the name of

IANTHŒNAS HYPŒNOCHROA.

Head, neck, breast, and under surface vinaceous brown, with glossy purple reflexions on the back of the neck, and a slight gloss of the same hue on the sides of the neck and breast; chin, sides of the face and throat white; all the upper surface, wings and tail dark slate grey, the margins of the wing-coverts and the feathers of the back and upper tail-coverts glossed with bronzy green; bill scarlet at the base, yellow at the tip; orbits naked and scarlet; feet reddish flesh colour.

Total length, 16 inches; bill, 1⅛; wing, 9¼; tail, 7; tarsi, 1.

Hab. Isle of Pines.

Remark.—This is a fine species, about the size of the common Pigeon of Europe. It pertains to the subgenus *Ianthœnas*, the members of which are very nearly allied to the birds constituting the genus *Carpophaga*.

Another pigeon from the same locality was named

TURACŒNA CRASSIROSTRIS.

Head, all the upper surface, wings and tail dark slaty black, the feathers of the back margined with a deeper black; a broad band of grey across the lateral tail feathers near the base, and the outer feather on each side tipped with darker grey; throat greyish white; under surface sooty, washed with grey on the sides of the neck, the breast and centre of the abdomen.

Total length, $14\frac{1}{2}$ inches; bill, $1\frac{1}{8}$; wing, $7\frac{3}{4}$; tail, $7\frac{1}{2}$; tarsi, 1.

Hab. Guadalcanar Island.

Remark.—This is a smaller bird than the Australian *Macropygia phasianella,* has a much thicker bill, and a shorter tail, which organ is moreover of a graduated form.

A fine Lory from San Cristoval was named

LORIUS CHLOROCERCUS.

Head, nape, and a patch on each side the neck black; plumage of the whole of the body fine scarlet, with a broad crescentic mark of rich yellow across the breast; tip of the shoulder silvery blue; wing-coverts yellowish green; outer webs of the primaries and secondaries dark grass-green; inner webs dull black, with a broad oblong mark of scarlet along their basal portions; basal half of the tail scarlet, the remainder grass-green; under wing-coverts and thighs fine blue; bill orange; feet dark brown.

Total length, 10 inches; bill, $\frac{7}{8}$; wing, $6\frac{5}{8}$; tail, $4\frac{1}{4}$; tarsi, $\frac{3}{4}$.

Hab. San Cristoval.

Remark.—This is one of the most beautiful species of the genus, and differs from all its congeners in having the apical half of the tail green.

A new *Hirundo* from Moala, one of the Feejee Islands, was characterized as

HIRUNDO SUBFUSCA.

Forehead, chin and throat rufous; crown of the head, all the upper surface, wing- and tail-coverts steel black; wings and tail dark brown; under surface of the body and under wing-coverts dark fuscous; under tail-coverts steel black, margined with light brown.

Total length, 5 inches; bill, $\frac{1}{2}$; wing, $4\frac{1}{4}$; tail, 2; tarsi, $\frac{1}{2}$.

Remark.—This is a very remarkable Swallow, resembling in the colouring of its back, throat and forehead the common Swallow of Europe; it is also very similar in size, while it has a much larger bill and a very diminutive and but slightly forked tail, the outer feathers not being produced as in the European bird.

The five birds above described are now deposited in the collection at the British Museum.

Mr. Gould also described a new and very beautiful Pigeon from the Solomon Islands as

IOTRERON EUGENIÆ.

Crown of the head, cheeks, upper part of the throat and ear-coverts white; centre of the throat and chest of the richest crimson; upper surface and wings green washed with orange; along the shoulder a mark of light grey, and a large spot of grey near the tip of each of the tertiaries; primaries dark slate grey tipped with orange-brown; secondaries slate grey bordered with orange-brown, and with a very narrow edge of yellow along the apical portion of the external web; under surface of the body greyish green; under surface of the wings grey; vent washed with yellow.

Total length, about 8 inches; bill, $\frac{3}{4}$; wing, $4\frac{1}{2}$; tarsi, $\frac{5}{8}$.

Hab. The Solomon Islands.

Remark.—The only specimen I have ever seen, and which is unfortunately imperfect, being destitute of tail, was sent to me by Mr. Webster, who had visited the above islands. This beautiful little Pigeon, certainly the most brilliantly coloured of the entire group, has been named in honour of Her Imperial Majesty the Empress of the French.

2. LIST OF MAMMALS AND BIRDS COLLECTED BY MR. BRIDGES IN THE VICINITY OF THE TOWN OF DAVID IN THE PROVINCE OF CHIRIQUI IN THE STATE OF PANAMA. BY PHILIP LUTLEY SCLATER, M.A.

The town of David lies in a beautiful plain on the left bank of the river of the same name, about twenty-five miles above its exit into the Pacific at Boca Chica. On the west of the town rises the extinct volcano of Chiriqui, a peak 9000 feet in altitude, and on the north the Sierra de Chorcha, a flat table-mountain, which here forms the watershed between the two oceans.

Mr. Bridges arrived at David in the month of January in the present year, and stayed there until the middle of the following March. He was principally engaged in collecting the magnificent Orchids of that country, of which he succeeded in obtaining a considerable series. During his leisure moments, however, he procured about fifty species of Mammalia and birds, of which a list is subjoined. These were principally collected near the town on the banks of the river, or between that and the '*Boqueti*,'—an elevated savannah of about 4000 feet above the sea-level, lying on the western slope of the volcano of Chiriqui.

This locality is very interesting to naturalists, being a stage in the passage between North American and South American zoology, which has not, as far as I am aware, been hitherto much explored. M. Warszewiz, the well-known Polish collector, was resident in David some time in 1849, but did not turn his attention much to birds except *Trochilidæ*, of which he discovered the six very interesting new species which were described by Mr. Gould before this Society in 1850.

Mr. Bridges has very greatly added to the value of my list by supplying me with notes upon the exact spot in which he found each species and upon what he recollected of their habits.

The nearest Bird-fauna to the present of which any detailed accounts have been published are those of Nicaragua, as given by Prince Bonaparte in his catalogue of the Birds brought from that country by Delattre in the *Comptes Rendus* of the Academy of Paris for 1854, and of the interior of New Granada, as shown by my List of Birds received in collections from Bogota read before this Society last year. To both of these papers I have frequently referred in the following list in order to show the geographic range of the species, and to avoid the repetition of synonymy already given.

MAMMALIA.

1. SAIMARIS SCIUREA (Linn.)?

Forests near David. A skeleton only of an animal probably of this species.

2. SCIURUS ———— ?

A black species, difficult to distinguish. Mr. Bridges states that it is common in the immediate vicinity of the town of David, and between that and the port of Boca Chica.

3. SCIURUS ÆSTUANS, Linn.

This seems to agree with Bogota specimens so marked in the British Museum. It is from the Boqueti at the base of the volcano of Chiriqui.

4. CYCLOTHURUS DIDACTYLUS (Linn.).

From the vicinity of David. Also seen near Panama. A strictly nocturnal animal.

5. CHOLÆPUS DIDACTYLUS.

From the forests near David. I believe neither this Sloth nor the Little Anteater has been hitherto observed so far north.

AVES.

1. PHAROMACRUS MOCINNO, De la Llave!—*Trogon resplendens*, Gould, Mon. Trog. pl. 21.

From the dense forest on the Boqueti; only three specimens seen.

2. TROGON AURANTIIVENTRIS, Gould, sp. nov. See *antea*, p. 107.

Inhabits the same locality as the preceding, and is more common. Also found farther down towards David.

3. MOMOTUS LESSONI, Lesson, Icon. Orn. pl. 62.

Agrees with Guatimala specimens. From the vicinity of David in the thickets. Stops during the day in the shady underwood, and seeks its food towards evening in the open spaces on the banks of the river.

4. CERYLE AMERICANA (Gm.)—P. Z. S. 1855, p. 136.

On the banks of the river David. Its habits are the same as those of our Kingfisher. Mr. Bridges also observed a large species more common than this, probably *C. torquata*.

5. GALBULA MELANOGENIA, Sclater, Cont. Orn. 1852, p. 61 et 93, pl. 90.

On the banks of the river David, rather uncommon, only three or four times observed.

6. **Campylopterus cuvieri.**—*Trochilus cuvieri*, Delattre et Bourc. R. Z. 1846, p. 310.

7. **Heliomaster longirostris** (Vieill.).—Gould, Mon. Troch. pt. 5, pl. 9.

8. **Lampornis veraguensis**, Gould.

These three Humming-birds are found in the outskirts of the town of David, feeding among the flowers of a large arborescent species of *Erythrina*.

9. **Amazilius riefferi** (Bourc.), R. Z. 1843, p. 103.

Found feeding on a malvaceous plant near the Boqueti, at an elevation of 4000 feet.

10. **Saucerottia niveiventris** (Gould), P. Z. S. 1850, p. 164.

11. **Saucerottia atala** (Less.).—Bp. Consp. p. 77.

12. **Hylocharis** (?) **cæruleigularis** (Gould), P. Z. S. 1850, p. 163.

All these three short-billed species are found in the very town of David feeding on the *Tamarindus indicus* and orange-trees. They are very pugnacious and constantly fighting together. Besides the seven Humming-birds here given, Mr. Bridges observed three others of which he did not obtain specimens. One of these (probably *Heliomaster constantii*) was feeding on a beautiful blue species of *Salvia* on the Boqueti.

13. **Cæreba cyanea** (Linn.).

Already noticed as far north as Nicaragua (Bp. Notes s. l. Ois. Coll. Delattre, p. 50), and lately brought by M. Sallé from the vicinity of Cordova in Mexico.

14. **Picolaptes** ——?

Vicinity of the town of David on the large forest-trees, with the habits of our Creepers.

15. **Thryothorus rufalbus**, Lafr. R. Z. 1845, p. 337; P. Z. S. 1855, p. 143.

In the dense jungle near David.

16. **Rhodinocichla rosea** (Less.), P. Z. S. 1855, p. 141.

Mr. Bridges only procured one specimen of this singular bird—a male. It was hopping about in the thicket close to the ground in the flat land between the rivers David and Chiriqui, uttering a very peculiar note, by which his attention was called to it.

17. **Mniotilta varia** (Linn.).

A North American species, ranging as far south as Bogota (P.Z.S. 1855, p. 143). Mr. Bridges says it has the habits of our Creeper, running up the trunks of the trees and searching for insects in the bark. He found it in the town of David.

18. Rhimamphus æstivus (L.), juv.

Mr. Bridges found this bird not uncommon in the town of David in the fruit-trees and *Erythrinæ*.

19. Tyrannus melancholicus, Vieill. P. Z. S. 1855, p. 150.

Margins of the plains near David, very common.

20. Milvulus tyrannus (Linn.).—" *Tijerita*."

Ranges from the Southern United States as far south as Bogota (P. Z. S. 1855, p. 150). Very common in the plains near David.

21. Todirostrum cinereum (Linn.).

See my remarks on the range of this species, P. Z. S. 1855, p. 148. Mr. Bridges found it amongst the trees in the vicinity of David.

22. Tyrannulus elatus (Spix),—P. Z. S. 1855, p. 150.

On the trees in the vicinity of David.

23. Tityra mexicana (Less.).—*Psaris mexicana*, Less. R. Z. 1839, p. 41, et *P. tityroides*, Less. R. Z. 1842, p. 41.

I consider this bird probably distinct from *Tityra semifasciata* of Bolivia and East Peru, to which it is generally united. It has all the rectrices banded across with black; while the other, speaking from the specimens I have seen of it, has the inner web of the outer pair of tail-feathers white. Delattre procured this bird in Nicaragua (Bp. Notes Orn. p. 88); M. Sallé has lately brought specimens from Cordova in Mexico; Mr. Bridges' examples are from the forests on the Boqueti.

24. Chiroxiphia melanocephala (Vieill.). See P. Z. S. 1855, p. 151.

In the bushes on the margins of the rivers near David.

25. Thamnophilus doliatus?

26. Thamnophilus bridgesi, sp. nov.

T. fumoso-brunneus: capite nigro, plumarum rachidibus albis: alarum tectricibus nigris maculis apicalibus rotundis albis: remigibus et rectricibus fumoso-nigricantibus, harum trium utrinque extimarum apicibus nigro marginatis; illarum marginibus externis brunnescentibus: gula et pectore toto ad summum ventrem nigricantibus, longitudinaliter albo striatis: tectricibus subalaribus albis.

Long. tota 6·7, alæ 2·8, caudæ 2·5.

This is a typical *Thamnophilus* not very closely allied to any described species, but to be placed near *nigrocinereus, maculipennis*, &c. (*vide* Edinb. Phil. Journ. n. s. 1855, i. p. 226 *et seq.*). Mr. Bridges found these two Bushshrikes in the thick bush on the margins of the river David. The first species was very common, but of the present only one individual was seen.

27. **Thamnophilus melanurus**, Gould?

A female specimen, probably referable to the New Grenadian species.

28. **Sturnella ludoviciana** (Linn.)?

"*Paxaro Savanero*." Amongst the grass on the plain near David. Very tame, and when disturbed does not fly far, but runs much.

29. **Yphantes baltimorensis** (Linn.).—Bp. Consp. p. 432.

Already noticed as far south as Real del Monte in Mexico by Bullock (Sw. Phil. Mag. 1827, p. 436), and Guatimala by Prince Bonaparte (P. Z. S. 1837, p. 116).

30. **Saltator magnoides**, Lafr.

31. **Ramphocelus dimidiatus**, Lafr. Mag. de Zool. Ois. pl. 81 (1837).

32. **Ramphocelus passerinii**, Bp.

Both these *Ramphoceli* are tolerably common, and generally met with together in the bushy underwood on the margins of the rivers. They feed on the fruit of a small species of *Ficus*. They are always seen near the water.

33. **Pyranga æstiva** (Linn.), P. Z. S. 1855, p. 156.

"*Sangue del Toro*." Not uncommonly met with near the Boqueti on the tops of the trees.

34. **Tanagra diaconus**, Less.

"*Azulejo*." The commonest bird in the country. Very abundant in the town of David.

35. **Calliste gyroloides** (Lafr.).

This is a wide-ranging species, extending hence to the head-waters of the Amazon in Bolivia, where specimens were obtained by d'Orbigny, that is, from 8′ north latitude to 18′ south latitude.

Mr. Bridges says it was not common at David. It is found on the high trees near the town, and feeds on the fruit of the small-fruited *Ficus*.

36. **Calliste franciscæ** (Lafr.).—*Aglaia fanny* (!!), Lafr. R. Z. 1847, p. 72; Des Murs, Icon. Orn. pl. 56, fig. 1.

This species appears distinct from *Calliste larvata* of Du Bus, to which it is usually united. The general colouring is pretty much the same, but the tints are still brighter in the present bird, and the head in particular is paler.

Mr. Bridges obtained a single specimen only of this beautiful Tanager, from the tops of the high trees on the banks of the river David.

37. **Euspiza americana** (Linn.).

Already noticed as far south as Nicaragua, and lately received by MM. Verreaux of Paris from S. Martha on the north coast of New Granada. Found in small flocks near David.

38. **Embernagra conirostris** (Bp.).—*Arremon*! *conirostris*, Bp. Consp. p. 488. — *Embernagra striaticeps*, Lafr. R. Z. 1853, p. 62; P. Z. S. 1855, p. 154.

I consider M. de Lafresnaye is quite right in placing this bird in the genus *Embernagra*. It is, at least, certainly no *Arremon*. It is found, like the last bird, in small flocks near David, feeding on the grass-seeds in the savannahs.

39. **Melanerpes formicivorus** (Sw.).

Agrees with Mexican specimens. Not rare in the forests of the 'Boqueti,' found on the evergreen *Quercus*.

40. **Centurus subelegans**, Bp. P. Z. S. 1837, p. 109; Consp. p. 121; P. Z. S. 1855, p. 162.

Seems to agree with Bogota and Venezuelan specimens.

41. **Chloronerpes cecilii** (Malherbe)?

Both these Woodpeckers are found on the trees in the outskirts of the town of David. The first is the more common, only one pair of the latter having been observed.

42. **Geotrygon chiriquensis**, sp. nov.

G. pure castanescenti-brunneus: dorso medio purpurascente: pileo cærulescenti-griseo: subtus dilutior, abdomine albescentiore: mento gulaque lactescenti-albis, rufescente tinctis: remigibus et rectricibus nigricanti-schistaceis: caudæ apice brunnescentiore: rostro nigro: pedibus rubris.

Long. tota 11·0, alæ 5·9, caudæ 3·5.

Both Prince Bonaparte and Mr. G. R. Gray, who have lately paid great attention to the *Columbæ*, consider this species as new to science, and it is upon their authority rather than my own that I have ventured to name it as undescribed.

43. **Chlorœnas rufina** (Temm.).—Bp. Consp. ii. p. 52.

From the dense forests of the Boqueti at the base of the volcano.

44. **Odontophorus veraguensis**, Gould, *antea*, p. 107.

From the Boqueti, where it is found in coveys running on the ground in the forests. The males have a peculiar call-cry.

45. **Aramides cayennensis** (Gm.) (Pl. Enl. 352).

In the bush on the banks of the river David.

46. **Parra hypomelæna**, G. R. Gray, juv.?

Found in the shallow waters running amongst the stones.

A young bird, white underneath, probably of *P. hypomelæna*, but it would be hazardous to decide positively without seeing adult specimens from the same locality.

3. Note on some Birds from the Island of Ascension. By Philip Lutley Sclater, M.A.

Dr. Acland, of Oxford, having lately placed in my hands, for naming, a small collection of birds from the Island of Ascension, I think it will be useful to record a list of them, although none of them are of great rarity, in order to make some contribution, however small, towards a more accurate knowledge of the geographic range of species.

Mr. Darwin (Zool. Beagle, p. 133) tells us that there are no aboriginal land-birds on this island. The only bird he mentions, which might claim that name, is a *Porphyrio* (*P. simplex*, Gould), which however, we are informed, was evidently a straggler not long arrived.

But recollecting the beautiful Thrush (*Nesocichla eremita*) lately described by Mr. Gould from the Island of Tristan d'Acunha, there is certainly no *primâ facie* reason why the Island of Ascension should not also possess peculiar land birds.

The specimens in Dr. Acland's collection are all Natatores, belonging to the following species.

1. Onychoprion fuliginosus (Gm.).

Latham (G. H. x. 102) has recorded the existence of this Tern upon the island in "*prodigious numbers*." It is found also on the American coasts from Texas to the Floridas.

2. Phaethon æthereus, Linn. (Pl. Enl. 998).

Visits Tobago, whence Sir William Jardine received the eggs of this species from his correspondent Mr. Kirk. See Cont. to Orn. 1852, p. 351, pl. 84, where the eggs of all three species of *Phaethon* are figured.

3. Phaethon flavirostris, Brandt (Pl. Enl. 369). *P. æthereus*, Audub. nec Linn.

Mr. G. R. Gray has rejected Brandt's excellent appellation for this species in favour of Brisson's *candidus*. But Brisson was no binomalist, and has no claim to bestow *specific* names in a *binominal system*. This *Phaethon* breeds on the Bermudas (Cont. Orn. *l. c.*), and visits the coast of Florida (Audubon).

Professor Brandt has written a good Monograph of the *Phaëthontinæ* in the Transactions of the St. Petersburgh Academy. These two species, and the *P. phœnicurus* from the Indian Ocean, appear to be the only three well-distinguished birds of the genus.

4. Tachypetes aquila (L.).

This name ought, I think, to be retained for the Atlantic bird. Mr. Gould has described and figured a smaller species from Australia; but he has also a larger bird from the coasts of that country, which appears different from the present.

5. Sula fusca, Vieill. Gal. Ois. pl. 277; Gould, B. Aust. vii. pl. 78.

6. Sula piscatrix (L.); Gould, B. Aust. vii. pl. 79.

Besides these two Gannets I am acquainted with five other apparently well-distinguished species, viz. *S. bassana* of Europe, *S. capensis* of S. Africa, *S. australis* and *S. cyanops* of the Australian seas, and *S. variegata* of the Pacific coast of S. America.

4. NOTE SUR UN NOUVEAU GENRE DES OISEAUX DE PROIE.

PAR JULES VERREAUX.

Genre Urubitornis, Verreaux.

Bec beaucoup plus haut que large; très comprimé; légèrement sinueux sur le bord, qui est un peu rentré vers la base; à courbure très sensible et à pointe longue et acérée; angle du bec atteignant à peine le niveau de la partie antérieure de l'œil: cire large et lisse, à narines rondes et percées en avant; face en partie denudée et garnie çà et là de poils noirs: tarses assez longs, robustes, et fortement reticulés, excepté sur la partie postérieure où se trouvent des larges plaques au nombre de neuf; quatre à cinq scutelles sur les doigts, dont l'interne est le plus fort, le médian plus long que l'externe qui est le plus court de tous; le pouce également robuste et armé d'un ongle aumoins aussi fort que l'interne.

Ailes longues, amples, dépassant la queue de plus d'un pouce, à 3^me^ et 4^me^ rémiges les plus longues; toutes les primaires échancrées sur leurs barbes internes. Queue moyenne, carrée et légèrement échancrée au centre, composée de 12 rectrices, barrée transversalement comme dans les vrais *Urubitingæ*.

Dans son ensemble, le genre tient des derniers par la coloration et par la bande transversale de la queue, mais il s'en distingue sous d'autres rapports indiqués ci-dessus. Les tarses surtout ne permettront jamais de le confondre. Sa taille est aussi beaucoup plus forte. Il semble tenir le milieu entre le genre *Harpyhaliaëtus* et *Urubitinga*.

A ne considérer que le plumage du jeune de cet oiseau, on le prendrait pour celui du *Geronoaëtus aguia*, tout il y a de rapport, voire même dans la queue qui ne laisse voir aucune trace de bande transversale, mais qui a la même motelare comme dans les jeunes des *Urubitingas*.

Nous ne sommes donc pas étonnés que Tschudi ait fait de cet oiseau un *Circaëtus* en égard à ces tarses, et que d'autres auteurs en aient fait un *Urubitinga* en ne considérant que la couleur. Nous pensons donc que la place que nous lui assignons est plus naturelle en ce qu'elle lie les deux genres qui ont tant de similitude entre eux.

Sp. typ. et unica Urubitornis solitaria.

Circaëtus solitarius, Tsch. Av. Consp. no. 14; Faun. Per. p. 94, t. 11.—Gray's Gen. p. 13, sp. 6.—Lafr. R. Z. 1849, p. 101.

♂ adulte. Couleur générale, noir-plombé, excepté sur la tête, l'extrémité des rémiges et les rectrices, qui sont d'un noir plus décidé; une large bande blanche traverse la queue, qui est également terminée d'un ruban étroit de même couleur ; on remarque sur les couvertures, tant supérieurs qu'inférieurs, des traces de bandes blanches au centre de quelques plumes, ainsi que quelques bordures vers leur extrémité. Les barbes des rémiges primaires et secondaires ont comme des raies mal accusées d'une teinte plus noire, et qui paraissent d'avantage en écartant les plumes : elles sont chinées et laissent voir çà et là, quelques teintes brun-roussâtre de la livrée précédente.

Longueur totale 70 cent.

♀ d'une année plus jeune. La coloration noire plus lavée de brun que de plombé, laissant voir çà et là quelques parties fauves, surtout sur le cou ; la bande médiane de la queue chinée de cendré, et la petite qui la termine plus étroite et d'un blanc moins pur que dans le précédent ; taille un peu moindre.

Tschudi dit que l'iris est d'un brun très foncé ; que la cire, la peau nue de la face et les tarses sont jaunes, le bec d'un brun-noirâtre, et les ongles d'un brun-grisâtre sombre.

Jeune ♀ dans sa 3^{me} année. Partie supérieure brune, plus ou moins parsemée de plumes plus foncées et bordées de roussâtre ; tête et cou d'un roussâtre plus ou moins fauve ; dessus et occiput à plumes brun-noirâtre très légèrement bordées de roussâtre ; des lignes longitudinales plus ou moins larges sur le cou et ses côtes ; une bande brune prenant du dessus de l'œil, passant en arrière et descendant sur les parties latérales du cou : gorge et joues d'un fauve clair avec des lignes étroites et brunes au centre des plumes, devenant plus larges sur le haut du cou ; poitrine brun-noirâtre, les plumes plus ou moins bordées de roussâtre et toutes de cette couleur à leur base, reste des parties inférieures d'un roussâtre plus ou moins vif avec des taches plus ou moins larges, sur les parties latérales surtout. Cuisses brunes avec des bordures rousses peu visibles à l'extrémité des plumes, mais comme rayées de fauve sur la partie cachée de chaque plume. Couvertures sous-caudales comme la poitrine avec des raies plus ou moins bien marquées de brun-noirâtre ; les supérieures de même, mais plus brunes. Queue brune avec une légère teinte grise et chinée comme dans le jeune *aguia*, d'une teinte blanchâtre en dessous avec les taches brunes plus multipliées ; ailes brunes, les plus grandes couvertures chinées de fauve. Rémiges brunes, les primaires noires sur la majeure partie de leur longeur, quelques unes de ces dernières les plus courtes terminées de blanchâtre ; couvertures inférieures roussâtres variées de brun-noirâtre ; dessous des rémiges fauve à partir de leur base jusqu'au trois quart de leur longueur, tachées çà et là de brun et chinées sur le reste. Même grandeur que les précédents.

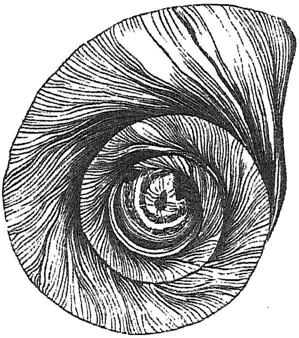
Nous avons reçus cet oiseau de S^{te} Marthe, Nouvelle Grenade, en 1843. Notre voyageur marque qu'il fréquente les grand bois, où il chasse les moyens mammifères et les oiseaux, voire même les Hoccos. Son naturel est farouche et d'une méfiance extrême.

"Mr. Bridges que j'ai vu il y a peu de jours m'a affirmé avoir rencontré ce même oiseau (*Urubitornis solitarius*) en Bolivie dans la province de Moxos par les 20° Sud le long de la rivière Urumose. C'est donc une localité nouvelle à ajouter à l'habitat de cet oiseau."

5. ON THE NUCLEUS OF THE OPERCULUM OF CYCLOSTOMA ELEGANS. BY JOHN EDWARD GRAY, PH.D., F.R.S.

In my various physiological papers I have attempted to establish the fact that the opercula of shells are analogous to the second valve of a bivalve shell, and are in fact a counterpart of the other valve. I have shown that they are formed at the same time on the body of the Mollusca; that they have a peculiar mantle, similar to the mantle of the spiral shell, and that they are increased in size in the same manner.

On lately examining the operculum of *Cyclostoma elegans*, I was struck with the fact (which might have been foreseen when the first formation is considered) that they have a somewhat irregular nucleus or first-formed part, like the nucleus to be observed on the apex of the spire of most univalve shells, as shown in the accompanying figure, drawn and engraved by Miss Jessie Dunlop.



I may further observe, that the operculum of this shell is formed of two shelly plates, separated from each other by arched laminæ concentric with the outer edge of the last whorl, placed under the concentric grooves of growth on the outer and inner surface, leaving a series of pores on the circumference in the groove between the two plates.

6. ON A MONSTROSITY OF HALIOTIS (ALBICANS?).
BY JOHN EDWARD GRAY, PH.D., F.R.S., P.B.S., ETC.

(Mollusca, Pl. XXXIV.)

Mr. Cuming kindly showed to me a series of four specimens of Ear-shells, which he procured in Paris, and of which he has some other examples.

The four specimens are all peculiar for having an elongated continued slit occupying the place where the series of perforations are usually situated,—this slit extending more than one-third of the length of the spiral ridges on the outer or left side of the whorls;

but it does not extend to the margin of the shell, and there is generally a more or less deep pit on the inner surface, in front of its extremity.

When I first saw the shell, I was inclined to regard it as a monstrosity; but when I considered the uniformity of the peculiarity in the specimens which I possess, and in those which Mr. Cuming had seen, I thought that it might be the type of a new form, for which *Schismotis excisa* would be a good name.

But a comparison of the shell with the specimens of *Haliotis albicans* in the British Museum from Van Diemen's Land, has induced me to believe that they are only varieties of that or some very nearly allied species, and that the peculiarity of their structure is produced by the locality they inhabit, the absence of the shelly matter on the branchial ridge being probably produced by the continued abrasions to which the shells have evidently been exposed, either by some chemical peculiarities in the water or the attack of parasitic animals.

All the specimens are in a very eroded condition, and two of them are very much pierced with a minute worm, and they all have the under valve of a *Hipponyx* attached on the left side near the circumference of the shell; one of these shells (which is generally the largest of the series) being placed in front of the slit between its termination and the front margin of the shell, covering the space which in the normal shell would be the place of one or two perforations.

If the exterior surface of a good specimen of *Haliotis albicans* is examined, it will be found that there exists a distinct narrow straight groove continued from one perforation to the other, and to the margins of the outer lip, which I have not seen so distinctly marked in any other species of the genus, indicating probably the suture between the overlapping of the two sides of the slit in the mantle of the animal, and this suture is marked but by a slight line on the inner surface of the shell. The same suture is to be observed in most other *Haliotidæ*, but they are generally not so distinct as in *H. albicans*, and much more sinuous.

I am inclined to believe that the slit in the specimens is to be considered as the imperfect filling-up of the shelly matter between the usual perforations, caused by the eroded and evidently diseased state of the specimens.

The interior of the shells is marked with a very rough tubercular muscular scar, which is not to be observed in perfect specimens of *Haliotis albicans*; but this will be found to be uniformly the case with most specimens of Ear-shells which have an eroded or worm-eaten outer surface, even in species which have a scarcely marked scar in their perfect or normal condition; so that this difference, like the slit, appears to depend on the state of the shells and the animal which formed it.

The interior of the shell presents a further peculiarity, but this is evidently caused by the same effects as the roughness of the muscular scar and slit on the branchial ridge, viz. there is a more or less deep broad groove on the inner surface between the slit and the subcentral muscular scar, which is more or less marked with regular cross grooves, and they are evidently impressions of the outer surface of the two branches of the gills.

Only one of the specimens I have seen shows any indications of the outer surface of the shell, and in that it only forms a band about one-fourth of an inch wide on the edge of the outer lip ; it is pale, greyish, and concentrically striated, like the surface of the normal specimen of *Haliotis albicans.*

This kind of monstrosity was to be expected, as the mantle of the animal is slit under the perforations on the shell; and we have in *Scissurella* and in several fossil genera the perforations replaced by a more or less continued slit over the mantle ; but I have never before seen an Ear-shell with more than two holes united into a short slit by the absence of the shelly matter between them ; but when we examine the *Haliotis albicans,* the existence of the more distant exterior groove renders it the species in which one should more readily expect such an abnormal formation to occur.

I have seen two specimens of two species of *Haliotis,* which exhibited just the converse deformity, that is, being without any appearance of the series of perforations, the place of the holes being occupied by a continued convex spiral rib, like the second rib in *Padollus.* Most probably in this individual the mantle of the animal was without any slit, and hence the malformation, the water being admitted to the gills by the slight notch in front of the ribs, as in some *Emarginulæ* or *Scuta.*

Dr. Crisp exhibited the brain and a sketch of the head of a monoculous Lamb. It weighed 4½ lbs., and was born alive at the full period of gestation. There was one large eye in the centre of the forehead, and the nostrils were absent.

The orbit was formed by the os frontis above, by the malar bones on each side, and below by the superior maxillary bone, the lachrymal, nasal, turbinated bones and part of the os frontis being absent. The greater part of the interior of the cerebrum was absent, the cavity being occupied by serous fluid. The *thalami, corpora striata* and *corpus callosum* were deficient. No olfactory nerves existed. The right optic nerve only was present, and this entered the eye in the usual situation ; the other pairs of nerves were in their normal positions, but those to the muscles of the eye could not be clearly traced.

The humours of the eye were apparently natural, but the cornea was rather opaque ; the diameter of the organ was 14 lines ; the weight of the humours 40 grs. ; the crystalline lens large and well formed.

In Vrolik's 'Tabulæ ad illustrandum Embryogenesin Hominis et Mammalium,' a case is related and drawings given of a somewhat similar monstrosity in a lamb. In this instance, also, "the greater part of the cerebrum was wanting, and no olfactory nerves were present ;

the two optic nerves appeared to unite without decussation; the eye was large, and two pupils existed; the nostrils were absent."

Dr. Crisp remarked, that although the Cyclops variety of monstrosity was not very rare, but few cases were on record of the dissection of the brain.

June 10, 1856.

Dr. Gray, F.R.S., in the Chair.

1. ON TWO NEW SPECIES OF HUMMING BIRDS BELONGING TO THE GENUS AMAZILIUS. BY JOHN GOULD, F.R.S., V.P.Z.S., ETC.

AMAZILIUS CERVINIVENTRIS, Gould.

Head, all the upper surface and wing- and upper tail-coverts bronzy-green; wings purplish-brown; tail dark chestnut-red, each feather narrowly bordered and tipped with a bronzy lustre, which is of greatest extent and most conspicuous on the two centre tail-feathers; throat and chest luminous green; under surface of the shoulder and flanks dull green; abdomen and under tail-coverts fawn-colour; thighs white; upper mandible yellow at the base, merging into brown and tipped with black; under mandible pale yellow, except at the tip, which is black.

Total length, 4 inches; bill, $\frac{15}{16}$; wing, $2\frac{1}{4}$; tail, $1\frac{5}{8}$.

Hab. Cordova, in Mexico. Collected by M. Sallé.

Remark.—This species is about the size of *A. Riefferi*; but its bill is less robust; the wings, as in that species, are uniform purplish-brown; the chestnut colouring of the tail-feathers and the under tail-coverts is of a somewhat lighter hue.

AMAZILIUS CASTANEIVENTRIS, Gould.

Crown of the head, upper part of the back and shoulders reddish-bronze; rump and upper tail-coverts greyish, with a bronzy lustre; wings purplish-brown, with the exception of the basal portion of the primaries and secondaries, which are rufous; tail dark chestnut, tipped with a bronzy lustre, of greatest extent and most conspicuous on the centre feathers; throat, fore part of the neck, breast, and upper part of the abdomen shining golden-green; under surface of the shoulders, lower part of the abdomen and under tail-coverts fine chestnut-red; thighs white; upper mandible brownish-black; under mandible fleshy-yellow, except at the tip, which is brownish-black.

Total length, $3\frac{1}{2}$ inches; bill, $\frac{7}{8}$; wing, $2\frac{1}{16}$; tail, $1\frac{1}{4}$.

Hab. Santa Fé de Bogota. From the Collection of Mr. Mark.

Remark.—This species differs from *A. cerviniventris* in the much greater depth of the chestnut colouring of the abdomen, under tail-coverts and tail; in size it is considerably less than that species, being even smaller than *A. Arsinoë*, to which it offers an alliance in the colouring of its wings, but from which it differs in the colouring of its abdomen; the white feathers of the thighs are much developed and very conspicuous.

2. ON SOME DEFECTS IN THE GROWTH OF THE ANTLERS, AND SOME RESULTS OF CASTRATION, IN THE CERVIDÆ.

BY JOHN S. GASKOIN, F.L.S. ETC.

The imperfect growth of one antler, or horn, in any species of the Deer tribe, the other being fully developed according with the age of the animal, I find has been, from time immemorial, popularly attributed to some disease or ailment of the testicle, or kidney, or even of a limb, of the side on which the defective antler may exist; so that to doubt its truth now would, to the uninquiring, seem to be mocking experience. Some time ago, a member of this Society exhibited at one of the scientific meetings the head of a Fallow Deer (*Cervus Dama*), which had been killed in Richmond Park, for the table, and selected, of course, from its mature age and fine condition; one antler of which was of ample growth for an eight years old animal, while the other consisted simply of the brow tine or antler and a short beam, each about eight or ten inches in length; and the park-keeper had ascribed this deficient development to disease of the kidney of the same side. No light was thrown on the subject at the time, and members, to whom the opportunity might occur, were invited to inquire into the correctness or otherwise of the attributed cause in other instances. It was the first occasion on which I had heard the question mooted. The deduction given, as to cause and effect, was obviously at variance with sound physiology. That the growth of a horn on one side should be impeded, and not that on the other also, when disease of a kidney, a testis, &c. is the cause of arrested production, must be from some accidental circumstance, and cannot be incidental to any such derangement; for organic disease of the viscera named, or of any other viscus, always deteriorates more or less, according to its severity and duration, the general constitutional health, and not that of a particular part only of the animal economy;—and moreover, the disease of no organ in a more remarkable manner influences by depressing the powers of the system, nor tends more surely to a fatal termination, than organic disease of the kidney;—whereas, in the case adduced as having arisen from such a disease, the animal was, on the contrary, in excellent health and admirable case. A paradox so apparent induced me to desire to investigate the subject, with the view of setting aside a popular error, if such, and substituting a rational deduction from facts; and having communicated my wish to Colonel Francis H. Seymour, deputy-ranger of Windsor Great Park, in which a larger stock of deer is kept than perhaps in any other in the kingdom, he most readily bid me furnish him with a written list of what I might require to prosecute my intention. It enumerated,—the head, with the antlers attached, of any buck that might be shot, having one horn only, of defective development; the kidneys, and the testes with their appendages, of the same animal; denoting the side from which each organ had been taken. This he very kindly immediately forwarded to John Cole, the head-keeper, with orders to carry out my wish on any opportunity occurring; and during the autumn of 1853 I received three cases, each containing all I had solicited, and the several parts duly labeled, as I had requested *. The antlers attached to the skulls of two are now on the table, and the other pair of antlers, which were detached. All these bucks were over eight years of age. I carefully examined the several organs belonging to each individual, having the advantage of the assistance of my friend Dr. Crisp in the first and the third examples; and I claim credit from the Society, on the part of both Dr. Crisp and myself, for knowledge of the difference of healthy from diseased structure. We found that every organ examined of each of the three animals was perfectly healthy, normal, and in every respect fully developed, as were all the animals from which they had been taken in most unexceptional health and in high condition; in testimony of which they had been killed for the table.

I will now give the measurements of the antlers, and the weights of the testes and kidneys, of all the three animals, designating the side from which each had been taken respectively.

Measurements of the Antlers.

	Developed Antler.	in.	*Defective Antler.*	in.
No. 1.	Beam, to the anterior point of the palm ..	22½	A simple bifurcation.	
			Beam	10½
	Brow tine, or antler ..	8	Brow tine, or antler ..	7
	Bis tine, or antler	4⅝		
	Vide fig. 1.			
No. 2.	Beam, to the anterior point of the palm ..	21½	Bifurcate.	
	Brow tine, or antler ..	6½	Beam	10½
	Bis tine, or antler	5½	Brow antler	10
No. 3.	Beam, to the anterior point of the palm ..	22	Bifurcate.	
	Brow tine, or antler ..	6½	Beam	6
	Bis tine, or antler	$3\frac{6}{8}$	Brow antler	8
	Vide fig. 2.			

Weights of the Testes.

	Side of the *developed Antler.*	Side of the *defective Antler.*
No. 1.	2 ounces 210 grains.	2 ounces 160 grains.
No. 2.	2 ounces 140 grains.	2 ounces 155 grains.
No. 3.	2 ounces 128 grains.	2 ounces 138 grains.

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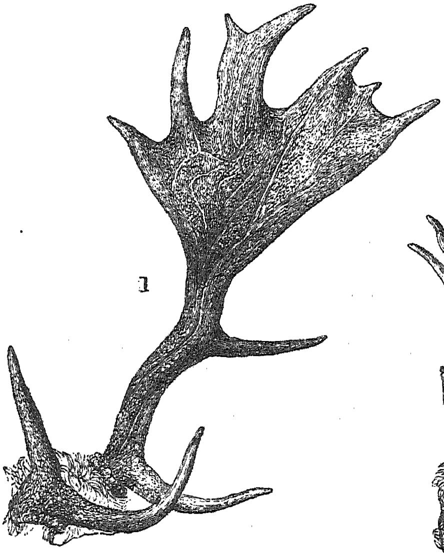
* I must here offer to Cole my thanks for the intelligent care with which he fulfilled the directions, and for the interest he took, and is still taking, in assisting me in these inquiries.

The spermatozoa of each exhibited, when magnified 250 diameters, perfect similarity and full and healthy development.

Weights of the Kidneys.

	Side of the *developed Antler*.	Side of the *defective Antler*.
No. 1.	4 ounces.	4 ounces 65 grains.
No. 2.	4 ounces 30 grains.	4 ounces 10 grains.
No. 3.	4 ounces 63 grains.	4 ounces 32 grains.



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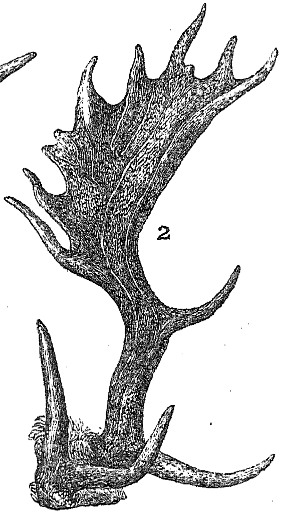

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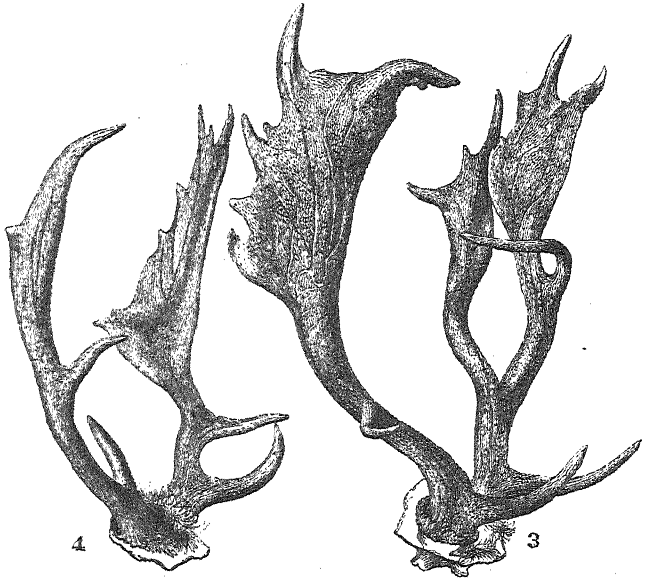
Such a similarity of results, from the investigation of *two* bucks only, might have occurred as a mere coincidence; but a *third*, when all had been selected for another purpose, having no reference whatever to this inquiry, and having been taken consecutively, will establish, I think, the fact, *that defective growth of one antler only, in the same buck, is not caused by an unhealthy state of kidney, of testicle, nor of any other organ, nor ailment of the animal.* That a defective horn and a diseased organ may be coexistent, and even on the same side, there can be no question; but that would be a mere casualty, a "non sequitur." Arriving at this obvious conclusion, I declined imposing further on the kindness I had received, and the trouble I had given, by requiring other examples of the sort for investigation.

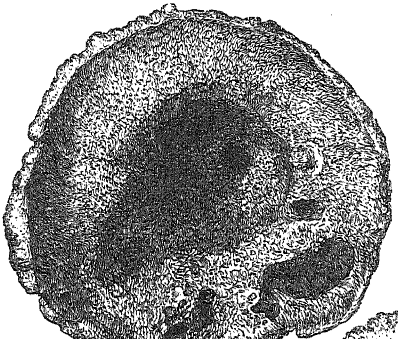
I have, however, placed on the table three other pairs of antlers attached to their respective skulls, in which the disparity of each antler with its fellow (*vide* figs. 3 & 4) is scarcely less remarkable than those I have just described; and the bucks which produced them were in every respect in equally perfect health and excellent condition, and were, in consequence, chosen for the Royal larder.

I could place before the Society parallel instances without end, but I have considered it unnecessary to offer more.



There can be no doubt that the growth of *both* antlers may be simultaneously impeded, by a state of general ill-health of an animal, from whatever cause it may have arisen, a diseased organ, or other ailment; it remains to be accounted for, how *one horn only* should so frequently be affected in animals possessing perfect constitutional health. No one, I imagine, can have observed the herds of deer in parks, without noticing always several among each, having one more or less incomplete antler, and sometimes both; and if these were caused by any disease, the circumstance would indicate an unwholesome condition of the stocks of all parks in the kingdom. From the conversations and correspondence I have had with most experienced park-keepers, and others well versed in knowledge of deer, and from my own observations, I have no doubt that the occurrence is almost invariably from external injury to the horn itself during the time of its formation, or to the hairy vascular integument, or "velvet," by which it is invested during that period. An instance illustrative of this opinion I witnessed in our Gardens some two years ago. An Axis Deer (*Cervus Axis*), whose antlers were about half produced, was required to be caught, and in making resistance, it sprang up, and being in a small pen, struck one horn against the roof, by which it was fractured, about three inches from its extremity, without rupturing or injuring the velvet covering; and the brow-antler, at the same time, had a considerable portion of the integument forced off, so that it bled profusely, and I stopped the hæmorrhage by tying the part with twine. The fractured part swelled, and although not displaced from its natural position, it did not reunite, and in ten days separated; and in about the same period the portion beyond the ligature became dead and also fell off, or more probably they were rubbed off instinctively by the animal;—from neither of these points did any increase of growth afterwards occur. Thus the fracture of the horn in the one instance, and the destruction of the "velvet" in the other, equally incapacitated Nature to repair the injury, or to continue the growth. I may observe that the horns of the *Cervidæ* during their formation are to a certain degree flexible, and may be broken as short and as easily as a raw carrot. Accidents similar in result to those I have now described, from the pugnacious disposition of bucks towards each other, are frequently occurring; and although, during the time of the production of the horns, they will not use them either for attack or defence, they are not the more peacefully disposed on that account; but their attacks and defence are then carried on by their teeth, or by the employment of their sharp, wedge-shaped hoofs; striking sometimes with one, or by rearing the body, greater force is given and both are brought into action; —and the head being the part usually aimed at, the soft horns are liable to be fractured, or the investing vascular integument to be torn; in the former case it never again unites, and the extreme part falls; and in the latter it may be such as to destroy the capability of further production, and that especially if the injury be at the points of the growing antler. Of the power and precision with which the *Cervidæ* are able to strike with their hoofs, Gilbert White relates a remarkable example in a hind, which, to protect its fawn from an approaching lurcher, "rushed out of the brake, and taking a vast spring with all her feet close together, pitched on the neck of the dog and broke it short in two." That the popular error I have endeavoured to refute should have arisen cannot be surprising, when we reflect how common was the custom, in the "olden time," to emasculate bucks to become "hevers," or "heaviers," that the board of the epicure might teem with "good fat venison" all the year through; and the modes too, or rather degrees of completeness, and the age of the animals when the operation may be performed, being followed by different, and by almost uniform results in each instance, were so likely to impress on the minds of those witnessing them a notion of some marvellous relation of the horns with the testes.

I will conclude this paper by cursorily stating the effects of perfect and imperfect castration at different ages of the animals. Sir Philip de Grey Egerton, Bart., informed me by letter that, "In order to test the accuracy of a vulgar notion, that a relation subsisted between the testicle and the horn, and that an injury to one of the former caused a corresponding deficiency in one of the latter, I had two buck fawns deprived, one of the right, the other of the left testicle. The result was that they nevertheless put up horns, and, as far as I could judge, without any discrepancy between the right and the left horns." Fawns, when cut prior to the formation of any horn, that is within a week or so after birth, both testes being *wholly* removed, with a portion of the cord (vas deferens) also, will never bear horns, however long they may live; but if the bodies of the testes only be taken away, the "knob" (epididymis) being left attached to the cord, the animal will have horns, and renew them annually; the shedding being always rather later in the season, and the velvet covering remaining for a somewhat longer period on their surface than with the entire buck; and further, they will be more slender in the beam, and more porous in their internal structure. These semi-castrated, if I may so style them, animals will go into rut, but not to the degree which produces emaciation; nor does the great thickening of the neck occur, which is so characteristic in the perfect animal during that peculiar season; nor are they capable of procreation. When the adult buck is castrated, the horns are shed shortly afterwards, and renewed; but the persistent periosteum, or "velvet," never separates from their surface, and the horns do not again fall, but remain attached during any period the animal may survive. These permanent antlers are often more developed than those produced by entire bucks of equivalent age, which I think may be well accounted for from the fattened state, and the longer influence from the continued adherence of the vascular integument by which the horns are formed. I may here observe, that circulation continues in the bone or horn after the periosteum has separated, and that, diminishing by degrees, first from the points, the vessels become obliterated, and vitality therefore ceasing, it is cast off. Redi, in his 'Experimenta Naturalia,' on the castration of deer, says, "Si cervus juvenis castretur, nondum emissis cornubus, cornua nunquam emittit; si castretur jam emissis cornubus, cornua nunquam mutat; sed quæ dum castretur habet, castratus semper retinet. Et hac in re verior est Aristotelis, Plinii, et Solini, quam Oppiani sententia, libro secundo, de venatione versu." (1675, 12mo. p. 162.) Redi is right enough in his first proposition, but, with his ancient authorities, sadly out in the two latter. Nature seems to employ different modes to cause the shedding of the antlers in the entire and in the gelded buck (I am alluding principally to the Fallow and to the Red Deer); the former being by secretion, the latter by absorption mainly. In the perfect animal the base of the horn is separated from its circular adhesion by a secretion from the conjoined surface of the cranium of a thin brownish fluid, which will even exude below the burr; and which is, in fact, the humid incipient process set up to form the succeeding antler; and the former bony union being thus detached, the horn falls. In the *castrati* the horn is divided from its attachment by absorption of the base of the antler, sometimes only horizontally (*vide* fig. 5), at others forming a concavity, or even a deep and irregular excavation (fig. 6); and occasionally the burr will be partially and sometimes entirely absorbed before the antler is shed (fig. 7). The rapidity of this process is the more remarkable after castration of adult bucks, it being in proportion as the operation is performed nearer the natural time of detachment of the semi-dead bone; thus, if it be about the end of March or so, the horns are cast in a fortnight; but if done shortly after the "velvet" has separated from the newly perfected antlers, in the month of September or thereabouts, they are shed in a month afterwards. Specimens of these absorptions, and also examples of the bases of the horns shed by the entire animal, are here for the examination of the Society*.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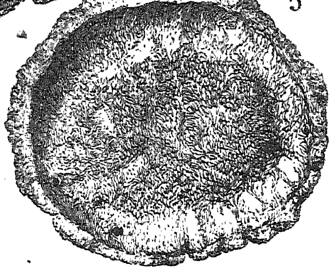
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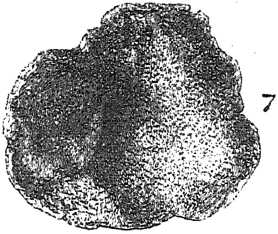
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I have purposely avoided citing authors, and have sought to relate facts only; my sole object in pursuing the inquiry I have detailed, being to endeavour thereby to expose the fallacy of some of the traditional vulgar errors respecting deer, and especially that of laterality, whether the influence be inferred to be exercised from the one side or the other, which have been handed down from, and are only worthy of, the remote ages whence they emanated.

P.S.—Within a few days, and since my having written the foregoing, a paper has been published in the 'Proceedings of the Linnean Society,' "On the influence of the Sexual Organs in modifying External Character," by my friend Mr. Yarrell, from whom I am extremely sorry to be obliged to differ as to some of the conclusions he has drawn from circumstances he has related, but which, nevertheless, I must not allow to pass unnoticed as they bear upon the immediate object of my paper. The author states, that "a red hind in the forest of the Duke of Gordon was observed to carry a single horn on one side of her head,—such a horn as the male red deer bears in his third year." She was shot. "And on internal examination by two competent persons, she was found to have a scirrhous ovary on the opposite side to that on which she bore the horn." Here we have a *lusus naturæ,* and an organic disease, coexisting in the same animal; and there can be no physiological reason why such might not be the case, and certainly there can be none that they should. The author proceeds:—"A red hind, in the park at Holkham, was observed to carry one horn of some length. . . . . . To add to the interest in this case, this hind dropped a calf; we may *therefore* suppose, the cornua and ovaries being double, that one side was healthy and perfect, and the other side probably diseased."

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* Figures 5, 6 and 7 are from specimens, Nos.
"3558. Shed antler of a Fallow Deer, from which half of each testicle had been removed soon after birth,
3563. Shed antler of a castrated Fallow Deer,
3565. Shed antler of a castrated Fallow Deer,"
in the Museum of the College of Surgeons.

I think, however, it would be more within the range of probability, and more natural, to suppose, as this hind had borne a calf (*malgré* the horn), that both her ovaries were sound, since the healthy exercise of the sexual functions, and also the fecundating powers of the ovaries were perfectly undisturbed. The deduction, that because a diseased ovary was *once* found to exist in a hind bearing a horn, that therefore all hinds bearing a horn must necessarily have a diseased ovary, cannot rest on the slightest validity; and all general conclusions, drawn from individual instances, must ever be the causes of error; and they are but too frequently errors in themselves. There are freaks of nature (*lusus naturæ*) which cannot physiologically be accounted for. "Felix qui potuit rerum cognoscere causas." Hinds may be furnished with a horn, and entire stags be destitute of antlers, &c.* Colonel M'Doual, late of the 2nd Life Guards, related to me, that while deer-stalking on his grounds, and being concealed from a herd that had gently approached him,—with hinds only, as he believed,—within range of his rifle, his keeper urged him to shoot one among them which was larger than the rest. He would not, however, do so, and when too late, he was assured that the animal had been long known to the keepers as a polled stag; of which he too was presently satisfied, by observing him advance towards some other stags, attack them, and drive them to some distance, and then return to herd again with the hinds. The author relates also a similar experiment, excepting the difference of age, to that given in a former part of this paper, of the removal of a testis from each of two bucks, *Cervus Dama* (four years old), the one from the left, the other from the right side; and observes: "Neither of these bucks cast either horn, nor was any lateral influence observable. They shed their horns as usual in the following spring, the new horns coming in due course; but in the autumn, when the horns had ceased to grow, and [had] become hard, all four horns were those of the third year, and not those of the fifth year: no lateral influence was observable, but it was *plainly shown that the diminished sexual power*, consequent upon the operation, had produced a corresponding diminution in the size of the horns in both cases."

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* The human hands are sometimes bestrewed with warts; the human frame totally denuded of hair, pubescent and other; and the hair becomes more or less suddenly perfectly white; but no diminution of wonted health, moral, physical, or sexual, precedes, accompanies or follows these states; although often during future existence, not a vestige of the pilous covering recurs, nor is the colour of the hair restored. Two instances of such albinism have occurred in our gardens in Barbary Mice (*Mus Barbarus*, Linn.), where one may still be seen.

That any "diminished sexual power" existed *per se*, as the cause of the deficient size of the horns in these instances, is, as in the case of the hind which dropped a calf having a diseased ovary, quite conjectural; but the horns not being fully developed, according with the age of the animals, after such an operation as the removal of a testicle, I conceive may be satisfactorily explained on more likely and on reasonable grounds, viz. the consequent deterioration of the general health which ordinarily would follow such a shock to the system, which in the adult animal is often severe, and the local disturbance very great. During ill-health and debility, secretion is impeded and absorption increased, the body becoming lean and the muscles losing their volume, and the secretion of horny (bony) substance, in common with that of all other solid secretions, would partake of the lessened action of the producing quality of the blood. It is from few facts that sexual power can be estimated; and I believe the loss of one testicle no more impairs that power than the loss of one eye impairs the vision of the other;—of course I speak of animals in perfect health. In the human race I know two examples, where marriage, after extirpation of one testis, was followed by a fine, and a resembling progeny to the male parent. It is much to be regretted that the further observation of these two bucks was prevented by the sale of the Society's stock at the farm at Kingston, as, on the recovery of their health and strength, I believe the horns afterwards produced would have borne testimony of the increase of their age.

3. DESCRIPTION OF NEW SPECIES OF SHELLS COLLECTED BY MR. T. BRIDGES IN THE BAY OF PANAMA AND ITS VICINITY, IN THE COLLECTION OF HUGH CUMING, ESQ. BY PHILIP P. CARPENTER.

Note.—Mr. Cuming, knowing that I am now engaged in working out the shells of the West Coast of North America for a Report at the forthcoming meeting of the British Association, has most kindly sent me all the shells lately collected by Mr. Bridges which he regards as new, with a request that I should describe them for him; at the same time enclosing the published species which he regarded as being the most allied forms. I trust to his well-known accuracy for the fact of their not being as yet described. Unfortunately many of the specimens had gone through the acid process, which has destroyed much of the microscopic markings which often furnish the best guide for the discrimination of species.

Warrington, June 9th, 1856.

1. **Strigilla disjuncta**, n. s. *S. testa satis magna, alba, tenui, planata; inæquilaterali, postice producta; marginibus dorsalibus subrectis, ad angulam* 120°, *aliis bene arcuatis; lineis incrementi vix monstrantibus; lineis undulatis exillimis, antice concentricis, umbones versus ascendentibus, sinu angustiore; dein ad marginem ventralem rapide descendentibus; dein subito, angulo acuto, circiter* 20° *postice rursus ascendentibus; lineis angularum in valva utraque haud convenientibus; margine postico sinuato, sculptura postea fortiore; margine antico quoque sinuato; lunula distincta, sinuata; ligamento subelongato; dent. card. valva altera uno parvo et uno magno bifido; altera uno parvo bifido; dent. lat. acutioribus, haud distantibus.*

Long. 1·35, lat. 1·54, alt. ·54 poll.

Hab. In Sinu Panamensi; legit *T. Bridges.* (Mus. Cuming. sp. duo.)

Allied to *S. sincera,* Hanl.; remarkable for its large size and very fine markings, and named from the lines of markings in the two valves not agreeing at the edges.

2. **Tellina Deshayesii**, n. s. *T. testa* "T. exili" *simili, sed multo magis inæquilaterali; ligamento solido; postice vix rostrata.*

Long. ·56, lat. ·9, alt. ·26 poll.

Hab. In Sinu Panamensi; legit *T. Bridges.* Sp. un. in Mus. Cuming.

3. ? **Scrobicularia virido-tincta**, n. s. *? S. testa* "? S. productæ" *simili; sed latiore, ovali, tenuiore, magis planata, antice haud producta, alba; umbonibus viridi tinctis.*

Long. 1·42, lat. 2·05, alt. ·65 poll.

Hab. In Sinu Panamensi, una cum ? *S. producta*; legit *T. Bridges.* Sp. un. in Mus. Cuming.

Another of the species intermediate between *Tellina* and *Scrobicularia* proper, and apparently nearer to the former genus.

4. **Semele planata**, n. s. *S. testa subtriangulari, margine ventrali valde excurvato; cinereo-albida, circa lunulam minimam et aream ligamenti roseo eleganter penicillata, intus flavido tincta; rugis concentricis subdistantibus, irregularibus, parum elevatis; striulis creberrimis radiantibus, valde irregularibus, rugulosis sculpta; postice maxime sinuata; valva una magis quam altera planata; fossa ligamenti recta, angusta; sinu pallii modico, lato.*

Long. 1·4, lat. 1·56, alt. ·47 poll.

Hab. In Sinu Panamensi; legit *T. Bridges.* Sp. un. in Mus. Cuming.

Differs from *S. punctata,* Sow., in the absence of punctures, in the triangular dorsal margins, unequal flattening of the valves, straight narrow hinge-pit, and the much smaller size of the pallial sinus.

5. **Mactra (Mactrella) lacinata**, n. s. *M. testa parva, tenuissima, cinerea, ventricosa; postice angulata, carina modica, fimbriata; læviori, concentrice vix undulata, rugulis epidermidis tenuis subdistantibus ornata; subæquilaterali, umbonibus prominentibus; dent. card. parvis, lat. acutis, haud distantibus; sinu pallii parvo, subangulato.*

Long. ·56, lat. ·69, alt. ·4 poll.

Hab. In Sinu Panamensi; legit *T. Bridges.* Mus. Cuming, sp. tria.

Has a general similarity to *M. angulata* and kindred species. Remarkable for the epidermal fringe on the keel and regular concentric wrinkles.

6. **Cyclina producta**, n. s. *C. testa tenui, ventricosiore, alba, ventraliter producta; concentrice tenuissime striata; marginibus subregulariter arcuatis; umbonibus eleganter incurvatis; lunula nulla, linea cordiformi vix monstrante; area ligamenti elongata; dent. card. valva altera postico bifido, anticis* ii., *contiguis; altera posticis* ii. *acutis, elongatis, antico acuto; sinu pallii subangulato, umbones versus fere dimidium ascendente.*

Long. 1·62, lat. 1·58, alt. 1·05 poll.

Hab. In Sinu Panamensi; legit *T. Bridges.* Sp. un. in Mus. Cuming.

In shape something like *Cyrena maritima*, C. B. Ad., but in habit resembling *Cyclina subquadrata*, Hanl. (=*Artemis saccata*, Gould).

7. **Melampus Bridgesii**, n. s. *M. testa parva, ovali, nigrofusca, nitida; anfr.* viii., *sutura haud impressa, in spiram tenue spiraliter striulata; marginibus spiræ regulariter excurvatis; apertura pyriformi, labro acuto, nec calloso nec dentato; columella triplicata; plicis, antica spirali, obliqua; media acuta, transversa, subparietali; postica parietali, parva.*

Long. ·28, long. spir. ·08, lat. ·12 poll., div. utraque parte variante.

Hab. Ad ora Sinus Panamensis; legit *T. Bridges.* Sp. tria in Mus. Cuming.

Has the general appearance of *M. Adamsianus*, Pfr., from N. Ireland, but is much more slender, with a simple labrum.

8. **Umbrella ovalis**, n. s. *U. testa* "U. Indicæ" *simili; sed margine haud undulato, regulariter ovali; apice spirali, subprominente, minus inæquilaterali; epidermide tenui, haud nitente; adulta intus aurantia.*

Test. jun. long. 1·93, lat. 1·58 poll.

Hab. Ad ostia fluminis Chiriqui, in Sinu Panamensi; legit *T. Bridges.* Sp. duo in Mus. Cuming.

Concerning this remarkable shell, hitherto only found in the old world, and, in spite of the bulk of its animal, not observed by either Mr. Cuming, Prof. Adams, or Mr. Hinds, Mr. Cuming writes that it was not only brought by Mr. Bridges, but also by a gentleman in Paris, who collected it exactly in the same place. Two specimens are in Mr. Cuming's collection, of which one, very much thickened, appears to have formed part of a much larger shell.

9. PYRGULA QUADRICOSTATA, n. s. *P. testa ovali, alba, spira haud acuminata, marginibus excurvatis; carinis* iv. *acutis cincta, quarum* ii. *in spira extant, tertia vix supra suturam impressam apparet, quarta circa basin; aperturam versus, costulis incrementi decussata; apertura lata; labro tenui a plica quarta parietali interrupta.*

Long. ·28, long. spir. ·16, lat. ·15, div. 40°.

Hab. In ? flumina Sinus Panamensis; legit *T. Bridges.* Sp. un. in Mus. Cuming.

This pretty little shell is the Pacific analogue of the Swiss species for which the genus was constituted; differing, however, in form and number of keels. The specimen has been tenanted by a hermit crab, and has Bryozoa near the mouth.

10. ERATO ? MAUGERIÆ, var. PANAMENSIS. *E. testa* "E. Maugeriæ" *simillima, sed majore, vix graciliore, apice minore, spira plerumque extantiore.*

Long. ·28, long. spir. ·03, lat. ·18, div. 130°.

Hab. In Sinu Panamensi; legit *T. Bridges.* Sp. tria in Mus. Cuming.

The differences are so very trifling between the specimens examined from the Pacific and West Indies as not to justify (without further knowledge) a specific separation. They do not appear constant in either type. The first whorl in the Pacific shells is somewhat smaller, while the shell is larger.

11. ? CITHARA SINUATA, n. s. *C. testa trapezoidea, spira subelevata, marginibus excurvatis; albida, rufo-fusco varie tincta; anfr.* ix., *subrotundatis, sutura parum impressa, quarum* iii. *nucleosi, diaphani, læves, dein liris spiralibus et radiantibus fortiter cancellatis; normaliter lirulis radiantibus et striulis spiralibus tenue sculptis, in anfr. ult. subobsoletis; apertura lineata, canali anteriore haud profundo, curtissimo; labro acuto, ad dorsum calloso, sinu antico parvo, postico angusto, profundo, intus haud denticulato; labio parietali haud calloso.*

Long. ·43, long. spir. ·18, lat. ·17, div. 43°.

Hab. In Sinu Panamensi; legit *T. Bridges.* Sp. tria in Mus. Cuming.

Closely related to *Pleurotoma concinna,* C. B. Adams, Pan. Shells, No. 167, from the description of which it differs in the whorls not being angular, and the sculpture on the spire being coarser, instead of finer, than the rest.

12. MANGELIA ACUTICOSTATA, n. s. *M. testa parva, turrita, albida, rufo-fusco tincta; marginibus spiræ excurvatis; anfr.* vii. *subtumentibus, superne obtuse angulatis, sutura impressa;*

costis radiantibus acutis, angustis, circiter ix. *subobliquis; interstitiis latis, confertissime et minutissime spiraliter striulatis; apertura subelongata; labro acuto, simplici, sinu rotundato, aperto; ad dorsum varice acuto, extante; labro tenui.*

Long. ·32, long. spir. ·16, lat. ·12, div. 30°.

Hab. In Sinu Panamensi; legit *T. Bridges.* Sp. un. in Mus. Cuming.

Intermediate between *M. rigida,* Hinds, and *M. striosa,* C. B. Adams.

13. MANGELIA ? RIGIDA, var. FUSCOLIGATA. *M. testa* "M. rigidæ" *simili; sed graciliore, costis acutioribus, lineis spiralibus minus expressis, fascia rufo-fusca super suturam plus minusve conspicua.*

Long. ·27, long. spir. ·15, lat. ·08, div. 28°.

Variat t. plus minusve elevata, seu latiore.

Hab. In Sinu Panamensi; legit *T. Bridges.* Mus. Cuming.

As far as can be judged from a comparison of nine specimens brought by Mr. Bridges with two of *M. rigida,* Hinds, this is a very variable species, differing in colour, strength of sculpture, solidity, or spiral elevation. *M. neglecta,* C. B. Ad., four specimens of which were found to vary, may also prove a brown variety of the same species.

14. DEFRANCIA INTERCALARIS, n. s. *D. testa graciliore, pallide castanea, fascia circa peripheriam pallidiore, spira elevata, marginibus rectis; anfr.* x. *rotundatis, suturis parum impressis; costis radiantibus supra circiter* xi. *rotundatis, interstitiis latis; infra aliis intercalantibus; lirulis spiralibus, subdistantibus, in spira plerumque* iii., *ad basin crebrioribus; rugulis radiantibus minutissimis tota superficie sub lente confertissime ornata; apertura ovali, canali brevi; labro margine acuto, vix serrato, intus denticulato, ad dorsum varice prominente, lateraliter compresso; sinu postico rotundato, aperto, sutura vix attingente, callositate parietali parva.*

Long. ·64, long. spir. ·35, lat. ·24, div. 25°.

Hab. In Sinu Panamensi; legit *T. Bridges.* Sp. un. in Mus. Cuming.

With some of the characters of *Drillia,* and a loose resemblance to *Pleurotoma gracillima,* this shell seems to have most affinity with *Defrancia rava,* Hinds.

15. DEFRANCIA SERRATA, n. s. *D. testa parva, turrita, marginibus spiræ excurvatis; albida, rufo-fusco fasciata; fascia aream sinus implente, dein circa basin continua; anfr.* viii. *convexis, costis rotundatis* xii., *circa basin obsoletis, et lirulis spiralibus costarum apices serrantibus,* iii. *in spiram monstrantibus, eleganter instructis; apertura subquadrata; labro ad marginem serrato, intus tuberculis* v., *ad dorsum varice valde prominente, ornato; sinu rotundato, lato; labio subrugoso.*

Long. ·3, long. spir. ·18, lat. ·12, div. 28°.

Hab. In Sinu Panamensi; legit *T. Bridges.* Sp. un. in Mus. Cuming.

Has the general aspect of *Mangelia rigida*, var. *fuscoligata*; and also resembles *D. rava*, Hinds.

16. Drillia punctatostriata, n. s. *D. testa intense purpureo-fusca, gracili, spira acuminata, marginibus excurvatis; anfr.* x. *satis rotundatis, suturis haud impressis; lirulis spiralibus acutis, distantibus, quarum* iii.–v. *in spira monstrantur, supra costis radiantibus inconspicuis circiter* xx. *obliquis, nodosis; juxta suturam carina haud extante; area sinus lineis incrementi costis convenientibus vix decussata; apertura elongata, intus haud denticulata, canali minimo; labro margine acuto, haud serrato, ad dorsum tumente; sinu antico minore, postico rotundato, profundo, faucibus coarctatis; labio haud calloso; tota superficie sub lente minutissime et confertim punctato-striata.*

Long. ·75, long. spir. ·4, lat. ·26, div. 27°.

Hab. In Sinu Panamensi; legit *T. Bridges.* Sp. un. in Mus. Cuming.

17. ? Pleurotoma gracillima, n. s. *? P. testa gracillima, pallide castanea, spira acuta, elevata, marginibus rectis; anfr.* xii. *rotundatis, sutura impressa; costibus radiantibus subdeclivibus* xviii., *ad jugum acutis, interstitiis parvis; lirulis spiralibus acutis, quarum* iii. *sive* iv. *in spiram monstrantur, ad intersectiones nodulosis; carina infrasuturali haud extante; area sinus latiore, sublævi; tota superficie minutissime spiraliter striulata, in spira radiatim corrugulata; apertura ovali, canali subelongato; labro margine acuto, vix serrato, ad dorsum valde calloso; sinu antico parvo, postico rotundato, aperto, suturæ contiguo, haud attingente; callositate parietali vix monstrante.*

Long. ·83, long. spir. ·49, lat. ·24, div. 20°.

Hab. In Sinu Panamensi; legit *T. Bridges.* Sp. unicum in Mus. Cuming.

Has many of the characters of *Drillia* and *Defrancia*; but the canal appears long enough to give it a place among the true *Pleurotomæ.*

18. Scalaria regularis, n. s. *S. testa parva, turrita, alba; anfr.* ix. *parum attingentibus; costis* x.–xii. *validioribus, extantibus, lineis subspiralibus apicem versus continuis; striulis spiralibus subobsoletis; umbilico nullo.*

Long. ·27, long. spir. ·19, lat. ·13, div. 32°.

Hab. In Sinu Panamensi; legit *T. Bridges.* Sp. tria in Mus. Cuming.

The ribs are stronger, more projecting, and the spiral sculpture fainter than in *S. Mindorensis.*

19. Scalaria tiara, n. s. *S. testa obesa, lævi, albida; anfr.* vii. *parum attingentibus, rapide augentibus; costis* xii. *acutis,*

valde extantibus, infra suturam parum alatis, attingentibus, lineis rectis ad apicem continuis; umbilico nullo.

Long. ·27, long. spir. ·16, lat. ·16, div. 48°.

Hab. In Sinu Panamensi; legit *T. Bridges.* Sp. un. in Mus. Cuming.

Distinguished from *S. obesa*, Sow., by the small size of the corresponding whorls, slightly winged shoulders, and want of umbilicus.

20. SCALARIA SUBNODOSA, n. s. *S. testa turrita, alba, gracili, lævi, anfr.* xii. *haud separatis; costis* xiv.–xvi. *plerumque acutis, huc et illuc latis, subdeclivibus, superne vix alatis; umbilico nullo.*

Long. 1·4, long. spir. 1·06, lat. ·5, div. 23°.

Hab. In Sinu Panamensi; legit *T. Bridges.* Sp. un. in Mus. Cuming.

21. SCALARIA CUMINGII, n. s. *S. testa* "S. mitræformi" *simili, sed paullum graciliore; anfr.* x. *quarum* iii. *primi læves; costis paucioribus,* viii.–ix., *minus coronatis, haud acutissimis, haud reflexis, striulis incrementi minutissime sculptis; anfr. valde separatis.*

Long. ·35, long. spir. ·25, lat. ·14, div. 30°.

Hab. In Sinu Panamensi; legit *T. Bridges.* Sp. un. in Mus. Cuming.

The lines of growth on the varices show that the coronations were never so sharp and elevated as in *S. mitræformis.*

22. SCALARIA HINDSII, n. s. *S. testa* "S. Cumingii" *simili, sed magis elongata, majore, anfr.* x. *haud profunde separatis; varicibus acutis* viii., *acutius coronatis, lineis regularibus, ad marginem alteram spiræ parallelis, ascendentibus.*

Long. 1·04, long. spir. ·79, lat. ·4, div. 25°.

Hab. In Sinu Panamensi; legit *T. Bridges.* Sp. un. in Mus. Cuming*.

23. NATICA EXCAVATA, n. s. *N. testa* "N. Broderipianæ" *simili; sed callositate parietali maxime elongata; regione spirali umbilicari valde excavata; albida, rufo-castanea lineis irregularibus radiantibus penicillata; striulis radiantibus crebrioribus.*

Long. 1·45, long. spir. ·3, lat. 1·5, div. 130°.

Hab. In Sinu Panamensi; legit *T. Bridges.* 2 sp. in Mus. Cuming.—S.W. Mexico, P. P. C.

This shell resembles *N. lineata* (Philippines) in colouring; but that shell is smooth, while the Panama shell has distinct, though not deep, radiating furrows, ending in a circum-umbilical line.

24. ? TRITON CREBRISTRIATUS, n. s. ? *T. testa* "T. picto"

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* The above species are published with doubt, as *Scalariæ* are seldom seen in sufficient numbers to ascertain the limits of specific variation. Species described from one or two specimens must always be regarded simply as "provisionally registered."

plerumque simulante; sed striis crebris spiralibus cincta; albida, rufo-castaneo dense maculata; apertura vix varicosa, intus simplici.

Long. ·58, long. spir. ·34, lat. ·24, div. 30°.

Hab. In Sinu Panamensi; legit *T. Bridges.* Sp. un. in Mus. Cuming.

Is destitute of the expressed spiral ribs of *T. pictus* (s. g. *Epidromus*, H. & A. Ad. Gen. i. 103). The only specimen seen has no teeth in the aperture. It may be only on the verge of maturity, or it may belong to a Buccinoid genus.

25. PHOS BIPLICATUS, n. s. *Ph. testa subelevata, anfr.* viii. *parum rotundatis; costis radiantibus circiter* xi. *rotundatis, interstitiis concavis; liris spiralibus extantibus acutis, supra costas castaneo tinctis, quarum* iv. *in anfr. penult. videntur; apertura contracta; labro intus dense lirato, labio interdum rugoso; columella plica acuta, canalem definiente, altera obtusa, vix bifida, superante; canali acuto, recurvato, ad dorsum nodoso et infra carina acuta ornato; colore albido, purpureo-fusco tincto.*

Long. 1·05, long. spir. ·6, lat. ·64, div. 50°.

Hab. In Sinu Panamensi; legit *T. Bridges.* Sp. un. in Mus. Cuming.

26. LATYRUS TUMENS, n. s. *L. testa* "L. gracili" *simillima, sed costis maxime tumentibus, attingentibus, sulcis spiralibus crebris ornata; plicis columellaribus* iii. *quarta obsoleta.*

Long. 2·78, long. spir. 1·57, lat. 1·44, div. 50°.

Hab. In Sinu Panamensi; legit *T. Bridges.* Sp. un. in Mus. Cuming.

In *L. gracilis* the spiral lines are few and raised; in this species numerous and impressed.

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4. DESCRIPTION OF NEW SPECIES AND VARIETIES OF CALYPTRÆIDÆ, TROCHIDÆ, AND PYRAMIDELLIDÆ, PRINCIPALLY IN THE COLLECTION OF HUGH CUMING, ESQ. BY PHILIP P. CARPENTER*.

1. CRUCIBULUM VIOLASCENS?, n. s. *Cr. t. solidiore, conica, albida, fusco maculata, intus violascente; vertice nucleoso conspicuo, adunco, anfr.* ii. *subtumentibus, apice planato; superficie rugis*

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* Mr. Cuming, having most obligingly lent me (for comparison with Mazatlan species) his type-specimens of various genera that cannot well be identified merely by descriptions, has asked me at the same time to describe certain forms which appeared to have escaped the notice of previous writers. Of the group here named *Chrysallida*, the Vitrinelloid forms allied to *Cyclostrema*, and the West American species of *Calyptræidæ*, details will be found in the Catalogue of the British Museum Collection of Mazatlan Shells, now in the press.

Warrington, June 9th, 1856.

plurimis parum irregularibus instructa, haud magnis, rotundatis, marginem huc et illuc pectinante; interstitiis variantibus.

Long. ·94, lat. ·78, alt. ·48 poll.

Hab. Ceylon; legit *Capt. Templeman.* Sp. unic. in Mus. Cuming.

Comp. *Calyphæa maculata,* Quoy (non Brod.), Lam. An. s. Vert. ed. Desh. p. 628.

The cup is unfortunately broken in the solitary specimen; but the attachment continues for ⅔rds of the height of the shell, with a very strong muscular scar at its side. It is distinguished by the close rounded ribs of the exterior and the rich violet of the inner surface.

2. CRUCIBULUM SPINOSUM, var. COMPRESSO-CONICUM. *Cr. spinosum abnormale, testa valde irregulari, conica, apicem aduncum versus lateraliter compressa, postea tumente; superficie haud spinosa, albo-fusca, fusca varie maculata.*

Long. ·9, lat. ·95, alt. ·75 poll.

Div. apicem versus, longitudinaliter 90°, transversim 40°; postea 100°; in adulta 15°.

Hab. California. In Mus. Cuming.

This most abnormal specimen by itself would never be taken for *Cr. spinosum*; nevertheless the intermediate forms in the British Museum Mazatlan Collection, between this and the flat and spiny states, are so gradual and numerous, that I feel compelled to affiliate it to that most variable species.

3. CRUCIBULUM ?? IMBRICATUM, var. CUMINGII. *Cr. t. conica, tenui, albo-fusca, rubro-fusco varie maculata seu lineata; vertice .... ?, satis adunco; costis numerosis, sæpe intercalantibus, usque ad* xl., *haud valde expressis, haud acutis, interstitiis tenue corrugatis; margine acuto, sæpe a costis palmato; cyatho albo, per duos trientes affixo, ad marginem interiorem subplanato.*

Long. 1·95, lat. 1·7, alt. 1·05 poll.

Hab. In Sinu Callaoensi, ad Peruviam; idem, Valparaiso. Mus. Cuming.

The shell differs from the non-pitted forms of *Cr. imbricatum,* Sow. (described as *C. dentatum* by Mke), in being very much thinner, with the ribs much finer and more numerous. The cup also is not fixed quite so far.

4. CR. ? CUMINGII, var. CARIBBEENSE. *Testa tenuissima, superficie ?haud corrugata, cyatho fusco tincto.*

Long. 1·1, lat. ·95, alt. ·5.

Hab. In insula "St. Thomas" dicta, in Mari Caribbeensi. Mus. Cuming.

A beautiful young specimen, in the Cumingian collection, differs from the Pacific form (1) in being thinner, which may be a peculiarity of growth; (2) in the want of corrugation of the surface, which may be the result of acid; (3) in a coloured stripe near the margin of the cup, which may be an individual idiosyncrasy.

5. Crucibulum pectinatum, n. s. *Cr. t. conica, aurantia, tenuiore; vertice nucleoso subadunco, pæne separato, anfr.* ii. *subtumentibus, sutura profunda, apice planato; dein superficie lævi, seu striis incrementi; dein rugis radiantibus extantibus, peracutis, ad periodos incrementi laminis concentricis irregularibus interruptis, interdum valde distantibus, interdum interstitiis parvis; margine a rugis cavatis stellato; cyatho (testa ? adolescenti) haud continuo, intus indentato, marginibus ad ang.* 50° *distantibus.*

Long. 1·14, lat. ·97, alt. ·6 poll.

Hab. Peru. Sp. un. in Mus. Cuming.

This specimen is distinguished at once by its golden-orange colour, rather thin growth, and by the characters of the ribs and cup. The ribs are generally distant, always sharp, resembling a young *Siphonaria gigas*; and as the margins of growth are often left like caves, a series of irregular pits are then formed as in *Cr. imbricatum.* On one part of the shell are diagonal furrows, as in *Cr. ?imbricatum,* var. *Broderipii*; but this may be an accidental peculiarity. The shape of the cup is as in the very young state of the other species, being a simple plate bent at an angle of 50° and there fastened at the two extremities to the inner surface of the shell. Other specimens are in the British Museum collection.

6. Crucibulum auriculatum, Chemn.
Patella auriculata, Chemn. Conch. Cab.

The Chemnitzian species is difficult to recognize. It is, however, most probably the West Indian form, answering to *Cr. umbrella,* Desh. (= *C. rudis,* Brod.). Perfect specimens are extremely rare in collections. On comparing a rather young shell in Mr. Cuming's collection (in which the finer markings have been removed in the beautifying process) with a series of *Cr. umbrella* from S.W. Mexico, I can scarcely find a single point of specific difference. The cup is attached only at the base, is white throughout, angulated in what would be the line of attachment, and indented along the inner margin. The outside has about thirty rather irregular ribs, which are neither sharp nor rounded. Colour whitish, speckled with brown. A large series from each side of the continent should be compared before the identity (or otherwise) of the species is decided. The comparative number and sharpness of the ribs are the principal points of difference. The colour varies greatly in the Pacific shells.

7. Crucibulum ? imbricatum, var. Broderipii.
= *Cr. imbricatum,* Brod. in Mus. Cuming: non *C. imbricata,* Brod. in Trans. Zool. Soc. pl. 27. f. 7.

Cr. ? imbricatum, t. albida, solida, subcompressa, conica; interstitiis costarum et laminarum incrementi interdum magnis, profundis, haud regularibus, interdum evanescentibus; superficiei parte rugis diagonalibus crebrioribus instructa.

This shell, which has borne the name of *Cr. imbricatum* in the Cumingian collection, may not improbably be only a variety of that species; but as it offers distinctive characters in its remarkable diagonal furrows, a name has been given to it in remembrance of the author of the Monograph in the Proceedings and Transactions of the Zoological Society. The shell figured as *Calyptræa imbricata* in the Transactions exactly accords with the young state of the ordinary thick, ribbed, and often pitted species of the W. American coast, figured by Sowerby under the same name in his 'Genera,' f. 5. An attempt to remodel the synonymy of this shell will be found in the British Museum Mazatlan Catalogue.

8. CYCLOSTREMA EXCAVATA, n. s. *C. t. margaritæformi, nitidiore, alba; anfr. nucleosis* ii., *lævibus; dein anfr. uno et dimidio striulis minimis radiantibus, excurvatis; dein anfr.* ii. *et dimidio normalibus; tota superficie minutissime spiraliter striatis; basi regione umbilicali maxime excavata; umbilico profunde spirali, anfractus ultimi dimidio solum monstrante; apertura subrotundata.*

Long. ·16, long. spir. ·08, lat. ·24 poll., div. 130°.

Hab. In Mari Sinensi. Sp. unic. in Mus. Cuming.

This shell appears glossy to the naked eye, and escapes from the fingers like a Zonites, but under the glass is beautifully sculptured. The first normal whorl appears as though engine-turned.

9. CYCLOSTREMA OCTOLIRATA, n. s. *C. t. parva, alba, anfr.* v., *quorum duo et dimidium nucleosi sunt; liris octo validis spiralibus cincta, quarum duo in spiram et una vix intus umbilicum maxime apertum sitæ sunt; sutura profunda; apertura circulari, anfr. penult. vix attingente.*

Long. ·4, lat. ·6, div. 155°.

Hab. In Mari Rubro. Sp. un. in Mus. Archer.

The umbilicus is so wide as clearly to show the junction of the apical whorls at the top. The species appears too strong, and the adult portion too large in proportion to unite with *Vitrinella*, with which it agrees in many characters.

10. ? CYCLOSTREMA PENTEGONIOSTOMA, n. s. *? C. t. subdiscoidea, parva, solidiore, alba; anfr.* v., *quorum ultimi duo normales sunt; carinis quinque cincta, una in spira, una valde prominente ad peripheriam, tuberculis obscuris undata, una in basi, duabus infra umbilicum maximum; tota superficie minutissime et creberrime transversim striata; apertura circulari, parum attingente, a carinis angulata.*

Long. ·04, lat. ·065—·09, div. 165°.

Hab. In Mari Rubro. In Mus. Brit. repertura.

Known at once from the tricarinate *Vitrinellæ* by its strong growth, the undulating periphery of the principal keel, and the very minute radiating striæ.

11. ? VITRINELLA SPIRULOIDES, n. s. *V. t. hyalina, diaphana, minima, tenuissima; spira planata, anfr. vix attingentibus, haud rapide augentibus; liris acutis subdistantibus radiantibus, circiter* xx. *cincta; interstitiis tenuissime spiraliter striatis; peritremate continuo, circulari.*

Long. (circiter) ·075, lat. ·025—·02, div. 180°.

Hab. Australia. In Mus. Brit. repertura.

This shell may be a *Cyclostrema*, but its texture agrees better with *Vitrinella*; it seems to be young, and differs from all other recorded species in the principal sculpture being transverse instead of spiral. Under the microscope, its beautiful sharp ribs remind the observer of the chambers of *Spirula*.

12. ODOSTOMIA (CHRYSALLIDA*) CREBRISTRIATA, n. s. *Chr. t. ovato-oblonga, solida, alba; vertice nucleoso parvo, declivi, in truncatione spiræ haud magna immerso; anfr. normalibus* vi. *planatis, suturis parum impressis; clathrulis transversis circiter* xx. *rectis, haud declivibus, sibi subparallelis, obtusis, circa basin rotundatam ad rimulam umbilicalem continuis, labrum adultum versus crebrioribus, tenuioribus; interstitiis latis, planatis, creberrime spiraliter striatis; apertura contracta, ad basin late effusa; plica columellari conspicua, transversa, obtusa.*

Long. ·132, long. spir. ·087, lat. ·053 poll., div. 23°.

Hab. Sual, insula Luzon, Philippinarum. Legit *H. Cuming*; sp. un. in Museo suo.

This shell is probably not quite, though very nearly mature; as the parietal lip is scarcely formed, and the labrum is not so thin as usual in the adult. The aspect is quite distinct from that of the Mazatlan species.

13. CHEMNITZIA CUMINGII, n. s. *Ch. t. valde elongata, turrita, alba, subdiaphana, interdum fusco lineata, seu maculata; vertice nucleoso helicoideo, parum prominente, anfr.* iii. *verticaliter sitis, apice conspicuo, marginibus spiræ rectis haud superante; anfr.* xviii. *normalibus, subrotundatis, suturis distinctis; lirulis transversis circiter* xxviii. *acutis, subrectis, subdeclivibus, circa peripheriam truncatis; interstitiis concavis, latioribus, a sulculis spiralibus* vi. *decussatis, in basin crebrioribus; apertura ovata, labro tenuissimo, columella vix intorta.*

Long. ·55, long. spir. ·47, lat. ·1 poll., div. 13°.

Hab. In Mari Sinensi. Sp. un. in Mus. Cuming.

Known at once from *C. grandis* by the spiral striæ in the concave interspaces.

14. CHEMNITZIA POLYZONATA, n. s. *Ch. t. haud parva, turrita, alba; vertice nucleoso tumente, helicoideo, anfr.* iii. *subverticaliter sitis, apice conspicuo; marginibus spiræ rectis, satis divergentibus superante; anfr.* x. *normalibus, satis tumentibus, suturis im-*

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* Subgenus CHRYSALLIDA.

Testa utrinque constricta, pupiformis; peritrema continuum, ad basin undatum; labrum juxta aperturam tenue, intus solidius; plica columellaris declivis, celata; superficies plerumque cancellata. Operculum (specie typica) radiatim corrugatum, tenuissimum.

Sp. typ. *Chemnitzia communis*, C. B. Ad., Pan. Shells, no. 223, pp. 166, 312. Particulars of this group will be found in the British Museum Mazatlan Catalogue, with descriptions of sixteen species from that place.

pressis; costis transversis subexpressis, latioribus, rotundatis, in anfr. penult. xx., *ad basin rotundatam continuis, postea evanidis; interstitiis minimis; lirulis planatis latis spiralibus, et costis et interstitiis superantibus, in anfr. penult.* ix.*; apertura vix ovata; labro acuto, ante peritrema tumente et postea contracto; columella valde intorta; regione umbilicali valde indentata.*

Long. ·37, long. spir. ·3, lat. ·1 poll., div. 18°.

Hab. Cagayan, in insula Mindanao, Philippinarum. Legit *H. Cuming*; sp. un. in Museo suo.

15. Chemnitzia bicarinata, n. s. *Ch. t. elongata, turrita, alba, huc et illuc varicosa; vertice ? . . . . ; anfr. normalibus* xii. + ? . . . . , *planatis, suturis valde impressis; liris transversis acutis, rectis, circiter* xxv., *haud declivibus, lineis ad apicem vix continuis; carina valida, extante, rotundata circa peripheriam, ad suturas vix monstrante; carina altera in basin minore; tota superficie minutissime spiraliter striata; apertura a carinis angulata; columella intorta; regione umbilicali maxime indentato; varicibus intus dentatis.*

Long. ·42, long. spir. ·36, lat. ·07 poll., div. 13°.

Hab. Cagayan, in insula Mindanao, Philippinarum. Legit *H. Cuming*; sp. un. in Museo suo.

In its remarkable base, it resembles *Ch. turrita*, C. B. Ad. (Panama).

16. Chemnitzia rubrofusca, n. s. *Ch. t. rubro-fusca, elongata, turrita; vertice nucleoso discoidali, anfr.* iii., *apice conspicuo; parum prominente, marginibus spiræ vix rectis haud superante; anfr. normalibus* ix., *quarum* iv. *primi subrotundati minus divergentes, alteri planati; lirulis transversis rectis, acutis, crebris,* xxvi., *circa basin evanescentibus; lineis haud declivibus apicem versus declivibus; circa basin rotundatam, haud umbilicatam, et interstitiis lirularum concavis, sulcis minimis ornata, in anfr. penult. circiter* viii.*; columella vix intorta.*

Long. ·27, long. spir. ·204, lat. ·065 poll., div. 16°.

Hab. In Mari Sinensi. Sp. un. in Mus. Cuming.

17. Chemnitzia Bittiformis, n. s. *Ch. t. valde elongata, turrita, alba; vertice ? . . . . ; anfr. normalibus* xii., *subplanatis, suturis distinctis; lirulis transversis circiter* xxx. *vix expressis, latissimis, rotundatis, attingentibus, circa basin rotundatam evanescentibus; lirulis spiralibus minoribus, in spira* vii., *in basi crebrioribus, interstitia minima decussantibus, lirulisque transversis superantibus; apertura ovata; columella vix intorta; huc et illuc varicibus tumentibus.*

Long. ·43, long. spir. ·36, lat. ·08 poll., div. 11°.

Hab. Cagayan, in insula Mindanao, Philippinarum. Legit *H. Cuming*; sp. un. in Museo suo.

Although the nuclear whorls have perished, the point of junction bears testimony to its sinistral character, while the general aspect of the shell is Cerithoid.

5. DESCRIPTION OF A NEW SPECIES OF ACTINIA FROM THE DEVONSHIRE COAST. BY E. W. H. HOLDSWORTH.

When contracted, the body forms a rounded button about ¾ of an inch in diameter, but in full expansion it is generally elongated to the extent of 2½ inches, and terminates in a somewhat cup-shaped disk about 1¼ inch wide, and having its extended edges frequently thrown into irregular festoons. The tentacula, about 150 in number, are arranged in four or five series, as in most of the group to which this species belongs; the first row contains twenty-five arms, about half the length of the diameter of the disk, and moderately stout; the others gradually diminish in size as they proceed outwards, their numbers at the same time increasing; but the irregular manner in which they are placed renders it difficult to enumerate the contents, or to determine the limits of any one of the series. The disk is of a uniform olive-brown without any superficial markings,—the appearance of radiating lines, sometimes visible, being only the upper edges of the internal septa showing through the transparent skin; the mouth opens transversely, and displays a regular crenation of its pink lining membrane. The tentacula are of a reddish purple, and entirely destitute of rings or other marking; they present a remarkable contrast to the body of the animal, which at its upper part is of a dark orange colour, gradually assuming a paler tint towards the base; numerous white sucking-pores are disposed over the upper surface, and afford points of attachment to surrounding substances, when required to conceal the body; they also give exit to the convoluted filaments, which are abundantly thrown out from them, and the mouth, when the animal is irritated. Its natural haunts appear to be narrow crevices of rocks, into which it can retire when alarmed, and I was prevented obtaining many specimens by their having chosen such inaccessible hollows for their residence. Four or five examples were, however, procured at extreme low-water mark, from the very productive rocks outside Dartmouth harbour, and, excepting in size, presented no points of difference. I propose for this species the name of *vinosa*.

June 24, 1856.

Dr. Gray, F.R.S., in the Chair.

1. ON THREE GENERA OF VESPERTILIONIDÆ, FURIPTERUS, NATALUS AND HYONYCTERIS, WITH THE DESCRIPTIONS OF TWO NEW SPECIES. BY ROBERT F. TOMES.

(Mammalia, Pl. XLII., XLIII.).

The genus *Furia* was established by M. F. Cuvier from the examination of a single example taken at Mona in South America, by M. Leschenault.

Linnæus having previously made use of the name in another branch of zoology, it has been proposed by Prince Charles Lucien Bonaparte to substitute that of *Furipterus*. The latter name will be here adopted, and as the opportunity of examining a second species has occurred, it will afford the means of confirming the generic characters given by the original describer, and also supply some additional peculiarities.

Genus Furipterus, Bonap.

The top of the head is very much elevated, leaving a deep hollow between that and the end of the nose. The muzzle is very short, rather small, and abruptly truncated at the end. This gives the end of the nose something the appearance of that part in the genus *Sus*, and the similarity is increased by the superior margin being produced in an upward direction, as in that genus. The end of the snout may properly be called a disc, widest at its base, and having a slight emargination in the middle of its upper boundary. In this disc the nostrils are placed, small, directed straight forward, and nearly round. Between them is a narrow vertical groove, continuous from the emargination of the upper border of the disc.

All the face is densely covered with soft long hair, only the flat end of the nose and the extreme margins of the lips being naked. Near to the edges of the lips, and about the corners of the mouth, the fur assumes the aspect of a beard. Around the upper margin of the nose-disc is a fringe of fine short silky hairs.

The ears are rather large and broad, directed forward, and deeply concave within. Their inner margins project inwards and forwards over the forehead in the shape of a rounded lobe. Their extremities are rather acute and directed outwards.

The tragus is shaped somewhat like the head of an arrow, supported on a narrow foot-stalk. It is short and rather broad, with a descending barb or point on each side, the outer one being the longer and more acute. From these it tapers rapidly to a narrow, but rounded tip, directed a little outwards.

The most remarkable peculiarities in the organs of flight consist in the excessively small size of the thumb, and the shortness of the middle phalange of the longest finger. The thumb has the basal joint much longer than the terminal one. It is wholly engaged in the antibrachial membrane, the nail only being free. The phalange of the finger, above alluded to, has its length contained three and a half times in that of the terminal one, and six times in that of the basal one. The middle phalange of the third finger also is somewhat shorter than is usual in most *Vespertilionidæ*.

The wing-membranes extend to the distal end of the tibia. The legs are long and slender, and the heel cartilage very long. All the membranes are thickly marked with fine dotted lines, the interfemoral having not less than twenty-five. In this respect they bear considerable resemblance to those parts in *Rhinolophus* and *Nycteris*.

The cerebral part of the skull is excessively elevated, quite dome-shaped, and the facial portion very much depressed.

From the extraordinary elevation and expansion of the parietal bones, the frontal bone is reduced to unusually small dimensions. Its posterior portion rises nearly at right angles from the termination of the nasal bones, is narrowly triangular, and ends in a point near the top of the elevated part of the cranium. Its anterior portion is nearly horizontal in position, and is deeply cleft in the middle by the nasal bones, which extend backwards as far as to the ascending part. What may therefore be called the facial part of this bone is divided into two forks, extending one on each side, between the nasal and maxillary bones. Each of these forks is somewhat swollen, and this, with a great depression along the line of union of the nasal bones, gives a deep longitudinal groove to the facial part of the cranium, which however becomes nearly obsolete at the nasal opening.

A great peculiarity consists in the development of the intermaxillary bones. These are not cleft in front as in *Vespertilio* (leaving only space enough for the incisors to be placed close to the canines, and in a line nearly continuous with them), but are united, leaving only two small incisive foramina in the anterior part of the palate. Also they differ materially from the same bones in the genus *Vespertilio*, in having the upper free margins, forming the walls of the nasal opening, continued without any diminution of their depth to their most anterior point. The upper margins of these bones are usually very much sloped in the genus *Vespertilio*.

In consequence of the great degree of development of the intermaxillary bones, abundant space is allowed for the incisor teeth. Accordingly there is a considerable interval on each side between them and the canines, and they are arranged, not in a line with the rest of the dental series, but *vertically* and in a regular curve across the extremities of the above-mentioned bones. There is however an interval in front, between the central ones, though not so considerable as the space contiguous to the canines.

Their form is that of a short cone, the inner pair with their points directed somewhat inwards.

The canines are of a very remarkable form—a form, so far as I am aware, not hitherto observed in any other mammal. They present four points: a central cusp of the usual canine form, a lobe accessory to this, and situated about the middle of its posterior edge, one at the base of the same edge, and one of a very pointed form at its anterior base. The remaining teeth in the upper jaw do not differ materially from those of *Vespertilio* proper.

The lower incisors are uniformly arranged and bifid. The canines are small, with an anterior and posterior spur at their bases, the anterior one being the longer, and appearing like two additional incisors. There are three premolars on each side, conical, and increasing in size as they approach the true molars. These latter resemble those of *Vespertilio* restricted.

The formula of dentition may be thus expressed :—

$$\text{In. } \frac{2\ 2}{3\ 3},\ \text{C. } \frac{1\ 1}{1\ 1},\ \text{P.M. } \frac{2\ 2}{3\ 3},\ \text{M. } \frac{3\ 3}{3\ 3},\ \text{total } \frac{16}{20}.$$

On examining the under surface of the skull, we find that the bony palate does not extend posteriorly beyond the last molar. In this respect it resembles the genus *Miniopteris*, whilst in *Vespertilio* the palate extends as far backwards as to the middle of the zygoma; in *Vesp.* (*Kerivoula*) *picta*, nearly as far back as to the condyloid fossa.

The lower jaw has, at the lowest part of the symphysis menti, a prominent tubercle, directed downwards, and projecting below the level of the lower margin of the jaw. It is probable that this may be equivalent to the *spinæ mentales.* From this, the margin of the jaw curves very evenly and moderately to the *posterior angle.* The ramus is very high, and the *coranoid process*, the *condyle*, and the *posterior process*, are arranged in nearly the same horizontal line, the *condyle* being a little elevated above the other two. The *posterior process* has a peculiar outward direction.

Such are the characters derived from the examination of seven examples. They do not include some peculiarities mentioned by M. F. Cuvier, viz. the presence of a series of warts on the upper lip, and under the chin, the prominence of the eye, and the cartilaginous condition of the terminal half of the tail. I have failed to detect any warts, nor do I perceive that the eye is more prominent than in other *Vespertilionidæ.* As, however, I am describing from dried specimens, too great reliance cannot be placed on the apparent absence of these characters.

With respect to the tail, in the seven examples examined, five have it wholly withdrawn from the membrane, and the remaining two only partially withdrawn, the terminal vertebræ being left in the situation proper for the basal ones. This may possibly have been the case with the example mentioned by M. F. Cuvier, as suggested by Dr. Gray.

It may not be amiss to remark that this genus resembles the genus *Kerivoula* of Dr. Gray (as illustrated by *Kerivoula picta*) in the form of the ear, but in no other respect have I found them similar. The crania, although greatly elevated in both, differ in other respects, and even in this they by no means closely agree.

The genus *Miniopteris* approaches most nearly to *Furipterus*, in the characters exhibited by the cranium. They somewhat resemble each other in the elevated form of the vertex, in the length of the bony palate, and in some measure in the form of the posterior portion of the lower jaw, and the development of the intermaxillary bones.

1. FURIPTERUS HORRENS.

Furia horrens, F. Cuv. Mém. du Mus. xvi. p. 150. tab. 9; Fischer, Synop. Mam. Addenda, 352; Temm. Mon. ii. p. 264; Wagn. in Suppl. Schreb. Sauge. i. p. 549; Schinz. Synop. Mam. i. p. 207; Less. Nouv. Tab. Règ. Anim. p. 22.

The eyes prominent and large. The nostrils apical, and separated only by a margin surrounding them, forming a groove at their upper part. Lips entire, the upper one with four or five warts along its side. The lower lip has eight warts, conspicuous from being of a white colour, amidst the surrounding black fur. Ears large, nearly as broad as long, simple in structure. The tragus is of a peculiar form, having three points arranged like a cross.

The fur is soft and thick, except at the muzzle, where it is longer and coarser than that of the other parts.

The colour is a fine uniform black.

Length of the head and body (English) 1″ 7‴; expanse 6″ 4½‴.

Hab. S. America, Mona.

2. FURIPTERUS CÆRULESCENS, n. s. (Pl. XLII.)

Top of the head very much elevated, face depressed, excessively hairy, only the end of the nose and the extreme edges of the lips being naked. Ears as broad as high, roundish, with the tips angular and directed somewhat outwards. Tragus short, supported on a narrow foot-stalk, immediately above which is a descending process on each side. From these it tapers rapidly to a narrow, but rounded point, which is directed a little inwards. About the middle, between the tip and the inner descending process, is a slight angular projection.

The fur is everywhere long and silky. That of the upper parts is slaty-blue at its base, slightly tipped with dusky-brown, but not sufficiently so, as to appear bicoloured. On the head it is somewhat paler than on the back. The long fur of the face is darker and not quite so blue. The fur margining the lips is of a silky ash-colour. The chin is of a uniform grey-brown, the breast blue-grey, the fur tipped for a third of its length with whitish-grey. On the belly and pubal regions it is nearly uniform whitish-grey.

Of the specimens examined, two are males and the remainder females, and all are obviously adult. The sexes are similar.

The great similarity in the size of the examples renders it unnecessary for me to give the measurements of more than one. For the purpose of comparison I add the dimensions of the figure illustrating M. F. Cuvier's memoir.

	F. horrens.		*F. cærulescens.*	
	″	‴	″	‴
Length of the head and body	1	6½	1	3
——— of the tail	1	1 (?)		?
——— of the head	0	0	0	6
——— of the ears	0	4½	0	3½
——— of the fore-arm	1	5	1	4
——— of the longest finger	2	7	2	2
——— of the fourth finger	1	7	1	9
——— of the tibia	0	7	0	6½
——— of the foot	0	4	0	3½
Expanse, following the bones, of the wings	9	3	8	9

Hab. St. Catharine, Brazil.

Genus NATALUS, Gray.

The forms of this genus bear considerable resemblance to those of *Furipterus*. The crown is very much elevated, and a deep depression separates it from the nose. The latter is broad, but not bulging at its sides, as observable in some *Vespertilionidæ* (such as *Scotophilus*, Gray). The top of the nose, in front of the eyes, is rather prominent, and rounds down evenly on all sides to the edge of the upper lip, which if seen from below would describe a half-oval figure. The above-mentioned prominence is furnished with a central longitudinal ridge, terminating between the nostrils. These are apical, approximated, and of an ovoid form. They are placed so near the margin of the lip that they might almost be described as situated in it. They do not interfere with the curvature of the outline of that part, being simple perforations.

The lower lip is furnished with a broadish, naked reflexed edge, divided by a vertical groove in front. Below this is an irregular semicircular double row of warts, studded with bristly hairs, and a larger one beneath at the symphysis menti.

The ears are rather large, broadest at two-thirds of the distance from their bases. They are furnished with a descending free lobe at the base of the outer margin, which is unattached to the side of the face, somewhat like the *lobulus* of the human ear. Their extreme tips are directed outwards.

The tragus is of very peculiar form; it is supported on a distinct stalk, which springs horizontally from the inside of the auditory opening. From the extremity of this, the tragus rises vertically, and occupies the usual position in the ear. It is short, broad, and somewhat fleshy. The two margins curve to a rather acute tip, which is directed a little inwards. At the outer edge, towards the base, is a descending angular projection. About the middle of the ascending part, the tragus is twisted upon itself, in such a manner as to present only the *edge* of the upper part to the eye, whilst the basal portion presents its *flat* surface. From its tip spring a number of fine bristly hairs, straight and long.

The legs, feet, and os calcis are long, and the toes occupy about one-half of the length of the feet. The tail is very long, equal in length to the head and body; it consists of seven joints, the terminal one being small. The wing-membranes have a singular mode of attachment to the tibia. Viewing the animal from the under side they are seen to proceed from the base of the os calcis, in the form of a narrow rudiment of membrane, extending up the inside of the tibia for a fourth of its length. At this point they cross over the tibia, and pass outwards, forming the posterior margins of the wings. The thumb is rather small, but the wings do not present any other great peculiarities. All the membranes are thickly marked with dotted lines as in *Furipterus*, the interfemoral membrane having between twenty and thirty.

The upper incisors are four in number, in pairs, separated from the canines by an interval, and with a space in the middle between the pairs. They are small, of nearly uniform size, and obtusely conical. In the space between them is a prominent horse-shoe-shaped cartilage, a little in advance of them, being a prolongation of the anterior boundary of the palate. Behind this is a transverse prominent palatal ridge, divided in the middle by a notch.

NATALUS STRAMINEUS, Gray. (Pl. XLIII.)

Natalus stramineus, Gray, Mag. Zool. & Bot. ii. p. 496; Cat. Mam. Brit. Mus. p. 28.

The face is very hairy, particularly along the median ridge, and on the upper lip, where it takes the form of a thick long moustache, extending the whole length of the lip. This rises on each side over the top of the nose, meeting in the middle, and forming a kind of transverse ridge of hair. Immediately in front of the eye is a naked space. The ears when held up to the light, present a singular dotted appearance, and resemble in this respect the *Vesp. papillosus* of Temminck. The extreme tip of the tail is exserted.

The fur is of medium length and substance. On the upper parts, of a uniform brownish-yellow; on the under, the same but paler. The membranes and naked parts are reddish-brown.

The whole of the above has been taken, by the kind permission of Dr. Gray, from the two examples mentioned in his Catalogue, and the following are their dimensions. The first column refers to the specimen in spirit from South America, and the second to the one from St. Blas, North America.

	No. 1.		No. 2.	
	"	'''	"	'''
Length of the head and body	1	9	1	11, about.
——— of the tail	2	2	2	0, nearly.
——— of the head	0	9	0	7½
——— of the ears	0	5	0	4
——— of the tragus	0	2	0	1¾
Breadth of the ear	0	6	0	4¾
Length of the fore-arm	1	5½	1	4½
——— of the longest finger	3	0	2	9
——— of the fourth finger	2	2	1	11
——— of the thumb	0	2	0	2¼
——— of the tibia	0	9½	0	8
——— of the foot	0	4	0	4
Expanse, following the bones, of the wings	10	6	10	0

Genus HYONYCTERIS, Licht. et Peters.

Incisors four above, in pairs, separated by a space in the middle, the apices bifid; below, six, contiguous, trifid. Canines, distinct, long, conical, surrounded by two rings or collars. Molars above and below, six on each side, the upper anterior ones separate, the three posterior ones close together and W-shaped. Tongue medium; snout elongated beyond the lips, with a discoid end (somewhat as in *Furipterus*). Nostrils below, *ensiform*. Lips tumid, the margins broadly reflected. Ears separate, broad, and furnished with tragus and antitragus. Wing-membranes broad, extending the whole length of the leg and foot, quite to the base of the nails. Interfemoral membrane entire, completely enclosing the tail, the last joint only of which is exserted. Thumb free, nailed, and with a broad suctorial disk attached to it. Index finger very short, scarcely a fourth as long as the basal phalange of the longest finger; all the remaining fingers with three phalanges. The feet with five toes, furnished with a suctorial disc. All the toes composed of only two phalanges, and united by a web. Os calcis lobed and long.

1. **Hyonycteris discifera,** Licht. et Peters.

Hyonycteris discifera, Licht. et Peters, Neue merkw. Säugeth. 1855*.

The upper parts cinnamon-brown, beneath paler; wings dusky-brown.

	″	‴
Length of the head and body....	1	7
——— of the tail	1	3
——— of the head............	0	7
——— of the ears	0	5½
——— of the tragus	0	2
——— of the fore-arm	1	3½
——— of the longest finger	2	6
——— of the fourth finger	1	8½
——— of the tibia............	0	7
——— of the foot and claws....	0	3
Expanse of wings	8	3

Hab. Puerto Cabello, Central America.

2. **Hyonycteris albiventer,** n. s.

The specimen from which the present description has been taken has lost some of its parts by accident, and with them some of the peculiarities described by MM. Lichtenstein and Peters in the paper already alluded to. Thus, the tragus has been eaten away from each ear by insects, the nose-disc apparently so much rubbed as to have lost its original form, and the thumbs are entirely wanting. In other respects the specimen is in sufficient preservation to confirm the characters given by the above-mentioned authors, and also to furnish an additional peculiarity not given by them in their description of the genus. This will be hereafter indicated.

The crown of the head is very considerably elevated, the face very concave, and the muzzle rather elongated. The ears are scarcely as broad as high, the inner margin (towards the top of the ear) is very much rounded, and the extreme tip is conspicuously directed outwards. The outer margin is considerably hollowed out† for nearly the whole of its length, but with a rounded prominence at its base. The face is very hairy, and the upper lip has a distinct moustache of long hair.

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* Gelesen in der Druckerei der Akademie der Wissenschaften, am. 22 Juni 1854. Berlin 1855.

† It appears desirable to state that the expression "hollowed out" must be taken in its literal sense, as the form here attempted to be described is very different from what is usually called "an emarginate ear," in the genus *Vespertilio.* In this genus it is a distinct "notch" in the outer margin of the ear: in *Hyonycteris* it is simply a shallow piece *scooped* out of the margin,—at least such is the

On the whole of the upper parts the fur is of a reddish-brown colour, uniform in tint from its root to the tip. On the under parts it is pure white, tinged with rufous on the humeral region and on the chin.

This species appears to differ from the last in having the ear much more hollowed out externally, in being somewhat larger, and in having the under parts pure white.

	″	‴
Length of the head and body	2	0
——— of the tail, about	1	2
——— of the head	0	9
——— of the ears	0	3¾*
——— of the fore-arm	1	5½
——— of the longest finger	2	6½
——— of the fourth finger	1	10
——— of the tibia	0	8½
——— of the foot and claws	0	3
Expanse of wings, following the phalange	10	6

Hab. River Napo, near Quito, where it was collected by Mr. Bates.

In addition to the generic characters given by the authors already quoted, the very peculiar form of the claws of the hinder feet may be mentioned. These are rather long, have a small degree of curvature, are very slender, and not compressed laterally as in other Bats. Their under surface is rather deeply hollowed out; in this respect they bear considerable resemblance to the claws of some Rasorial birds, such as the genus *Tetrao*, but they are relatively more slender. From their form they could scarcely be used as organs of suspension, and it is not improbable that the conspicuous discs attached to the thumbs and feet may answer the same purpose that claws are known to do in the ordinary Bats.

The elevated form of the cranium deserves special attention, as indicating an affinity in this particular with the genera *Furipterus* and *Natalus*.

The peculiarity of having the wing membranes extend to the claws is not restricted to this genus, as I have observed it in the *Vesp. suillus* of M. Temminck. This species has been considered by Dr. Gray to be sufficiently dissimilar from other examples of the genus *Vespertilio*, to merit generic distinction, under the name of *Murina*. Another species from Ceram (*Vesp. vulpinus*, Temm. Mus.

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case in the specimen I possess, but in the figure already referred to, this is less conspicuous.

* In taking the measure of the ear, it is my custom to consider it as a simple projection, and to measure along the line of greatest convexity of the hinder surface. This imaginary line will proceed from that part of the base nearest the crown, to the tip of the ear. A line along its anterior or posterior margin would be rather an indication of form than of absolute length, and should therefore be given additionally if the form of the ear seems to require it.

Ley.) possesses the same singular mode of attachment of the membranes. Not having carefully examined either of these, I am unable to offer any positive opinion respecting their affinity with the genera above described. It appears, however, probable that other characters would be discovered common to *Hyonycteris* and *Murina*, if a close examination were instituted.

2. NOTICE OF SOME INDIAN TORTOISES (INCLUDING THE DESCRIPTION OF A NEW SPECIES PRESENTED TO THE BRITISH MUSEUM BY PROFESSOR OLDHAM). BY DR. J. E. GRAY, F.R.S. P.B.S., ETC.

(Reptilia, Pl. IX. X.)

The most interesting specimen of the very curious series of Indian Tortoises presented to the British Museum by Professor Oldham, is a fine full-grown specimen of a species which so strongly resembles the South American *Testudo tabulata*, in size, form and colours, that it might easily be mistaken for a specimen of that species which had been taken to India in some vessel. But on a closer examination it is easily distinguished from the American kind by the following particulars :—

First. It belongs to the Old World divisions of the genus, or true genus *Testudo*, characterized by the last vertebral plate being as wide only as the caudal, and the hinder half of each of the hinder marginal plates, instead of being of the width of the caudal and the hinder marginal plates, as is the case with the American "*Gophers*," including the species *Testudo tabulata* and *Testudo gopher*.

Secondly. It has a large, elongated, well-marked nuchal plate, which is never found in *Testudo tabulata*.

Thirdly. The hinder notch is more angular and acute.

The specimen sent from India has the deeply concave sternum, which is supposed to mark the male animals, as is the case with many specimens of *T. tabulata*. It is sent under the name of '*Testudo elongata*,' which I willingly adopt; as it may have been noticed under that name in some Indian periodical which has not yet come under my observation.

1. TESTUDO ELONGATA. (Pl. IX.)

Thorax oblong, rather depressed, truncated in front, rounded behind, black; shield yellow-edged. Sternum rather narrow, truncated in front, angularly notched behind, yellow, largely black, varied. Nuchal plate elongate. The hinder vertebral plate as wide as the caudal and the hinder half of the hinder marginal plates.

Hab. India, "Mergui."

Note.—Since the above was written, I have received a Part of the Journal of the Asiatic Society of Bengal for 1856, and I find the following observations on this species, which appears to have been mentioned in a preceding volume :—

Testudo elongata, Blyth, Journ. As. Soc. Bengal, xxxii. 639. Vol. xxv. 1856, lxxviii. 712.

Mr. Blyth states, "a number of living specimens have been received from Captain Berdmore.

"Colour of naked parts olive-grey varied with dull yellow, and with black head conspicuously dull yellowish white."

Mergui, Tenasserim River.

2. **Testudo Horsfieldi,** Gray, Cat. Tort. B.M. t. 1.

There is a fine large specimen of this species, showing it is very distinct from the *T. græca* of Europe. The upper jaw has a small notch on each side of the tip.

3. **Emys crassicollis,** Bell.

The Collection contains three adult specimens of this species, which are marked "*Emys nigra,* Blyth."

The adult examples are rather broader than the younger specimens in which are usually found a mucro, and the dorsal keels are almost entirely obliterated ; the hinder edge of the thorax is acutely dentate ; the sternum is pale grayish, with black areolæ and rays. It is probably the absence of the keels in the adult state that induced Mr. Blyth to regard it as a distinct species ; but the keels become generally more indistinct in all the species which are keeled in their younger condition.

The specimens are marked as coming from "Mergui." The jaws are even, and not notched in front.

4. **Emys nigra,** n.s., Blyth, Journ. As. Soc. Bengal, lxxviii. 712.

Mr. Blyth observes on the affinity of this species with *E. crassicollis,* but he does not appear to have the means of comparison.

The Collection contains two species of the genus *Batagur* :—

5. **Batagur baska,** Gray, Cat. Tort. B.M. t. 16.

There is a very large adult shell of this species, which is marked "*Emys tentoria,* Blyth." It measures 21½ inches over the back, 19½ along the sternum, and is 18 inches across the back and 21½ over the convexity of the back. The jaws of the species are very strongly dentated, the upper one is toothed on the edge with two angular series of pits ; the lower jaw is furnished with two concentric series of acute spinose tubercles, those in the outer series the largest and very acute, the central one in front horny, very large.

6. **Batagur ocellata,** Gray, Cat. Tort. B.M. t. 36. (Pl. X.)

There is a beautiful specimen of a species of this genus from Mergui, which I am inclined to believe is referable to *Emys ocellata* of Dumeril and Bibron (Erpétologie générale, ii. 329. t. 15. f. 1) ; a species which I have not before seen in any English collection. I should have no doubt of its being that kind from the description; but in the figures the dark spots on the costal plates are represented as being nearly regular, circular, broad rings round a pale circular centre, while in the specimen received from Professor Oldham the dark mark on the costal plate is an irregular oblong or square mark only, partly surrounding the paler centre of the shield.

Mr. Blyth in the same paper observes, "*Emys ocellata* would appear to be the commonest species in the Burmese rivers, and its naked parts are olive-grey, the crown blackish, with a yellowish-white V-like mark over the snout, continued as a supercilium over each eye and back upon the neck, another straight line behind the eye, and both are often more or less broken into spots.

"Carapax dusky mottled with yellowish, a great black spot surrounded with a pale *areola* upon each discoidal (!) plate, dorsal ridges blackish with pale border, and lower parts wholly yellowish-white.

"Some are brighter coloured than others, and the ocelli become proportionally smaller as they increase in size.

"The carapax of our largest specimen measured 9 by 6¼ inches, but it probably is not nearly full-grown."

Hab. Burmah.

7. Cistudo dentata, Gray.

There is a fine adult specimen of this species in the Collection, also from Mergui.

3. DESCRIPTION OF MYGALE EMILIA, A SPIDER FROM PANAMA, HITHERTO APPARENTLY UNRECORDED. BY ADAM WHITE, ASSISTANT IN THE ZOOLOGICAL DEPARTMENT, BRITISH MUSEUM.

(Annulosa, Pl. XLIII.)

The large Spiders of the New World, though generally sombre in hue, are occasionally varied in colour. The *Mygale versicolor* described by Baron Walckenaer (Apt. i. 211), has the cephalothorax covered with down-like hairs of a metallic green lustre, and some of the hairs of the body have in certain aspects a violet reflection. The *Mygale rosea* described by the same author from the collection of M. Guerin Meneville, who procured it from Chili, is deserving of its specific name. The *Mygale Zebra*, figured in the fourth volume of the 'Annales de la Soc. Entomologique,' pl. 19, has the abdomen strikingly striped. Generally speaking, however, these large *Mygales*, whether from the Old or the New World, are rough, plain brown, or black creatures, with greyish scattered hairs. Since Walckenaer's work was published in 1837, several species have been added to zoological science, especially in the 8vo German work of Koch. The following species, pre-eminent for its striking beauty of colour, was obtained by my friend Dr. Berthold Seemann, the distinguished naturalist who succeeded Mr. Edmonstone on board H.M.S. Herald under Capt. Kellett, R.N., C.B.

I have but once seen a *Mygale* alive; the specimen was sent to the late Mr. John Doubleday by post, and when it reached London was evidently much shaken by its transit from Liverpool. The day after its arrival he gave it cockroaches. They were put into the small box along with the *Mygale*. It apparently at first did not see them, but on these "Cursorial Orthoptera" running about *Mygale's* legs, the great spider drew itself up, and darted its chelicera into one of them, tearing its intestines with its fearfully armed hook. The *Blatta* was soon devoured, and the spider, evidently an invalid after its rough journey, died next day.

Mr. H. W. Bates, who has for the last eight years so successfully collected Annulosa, and observed their habits at various points on the Amazon, in a letter to me, dated "Santarem, 30 April, 1855," written on the eve of starting for "the wonderful country of the Upper Amazons," remarks:—"With regard to spiders, I have observed many curious points in their habits, but I cannot communicate them until I can send specimens, with numbers attached, to which the notes can be referred. There is one observation I made, however, which I am sure will be of the highest interest to science. It is with respect to the habit of the *Mygales* to prey on birds. Now I have detected them in the fact as far back as 1849, but thought little of it at the time, as I had the idea that it was a well-known and undisputed fact in science. Lately, however, I read an account (I think of Langsdorff's expedition in the interior of Brazil), where the fact is considered to rest on no foundation, and to be one *more* of the fables originated by Madame Merian. Now I will relate to you what I saw. In the month of June 1849, in the neighbourhood of Cameta, I was attracted by a curious movement of the large grey-brown *Mygale* on the trunk of a vast tree. It was close beneath a deep crevice or chink in the tree, across which this species weaves a dense web, open for its exit and entrance at one end. In the present instance, the lower part of the web was broken, and two pretty small finches were entangled in its folds; the finch was about the size of the common Siskin of Europe, and I judged the two to be male and female: one of them was quite dead but secured in the broken web, the other was under the body of the spider, not quite dead, and was covered in parts with the filthy liquor or saliva exuded by the monster. I was on my return from a day's excursion by land, at the time, with my boxes full of valuable and delicate insects, and six miles from my house, and therefore could not have brought the specimens home, even had I wished, which I did not, as the species was a very common species, easily to be procured nearer home.

"If the *Mygales* did not prey upon Vertebrated animals I do not see how they could find sufficient subsistence. On the extensive sandy campos of Santarem, so bare in vegetation, there are hundreds of the broad slanting burrows of the large stout species (that fine one, dark brown, with paler brown lines down the legs). The campos, I know, from close research, to be almost destitute of insects, but at the same time they swarm with small lizards, and some curious ground-finches of the *Emberiza* group (one of which has a song wonderfully resembling our Yellow-bunting of England), besides which vast numbers of *Caprimulgi* (*C. psalurus*, Azara) and ground-doves lay their eggs on the bare ground. I believe this species of *Mygale* feeds on these animals and their eggs at night. Just at close of day, when I have been hurrying home, not liking to be benighted on the pathless waste, I have surprised these monsters, who retreated within the mouths of their burrows on my approach."

MYGALE EMILIA. (Pl. XLIII.)

M. nigro-fusca, cephalothorace, duobusque articulis singulorum pedum læte flavescenti-rubris.

Deep blackish-brown; the basal joint of chelicera with some scattered red hairs in front; the cephalothorax of a rich yellowish-red, the hairs short, close and velvet-like; the fourth and fifth joints of the legs clothed with yellowish-red hairs, the end of the fifth joint with many brown hairs; fourth joint of the first pair of legs, with the curiously hooked process near the end, also covered with red hairs, the under side of the fifth and sixth joints and the tarsi clothed with a close, dense, velvet pad. Body brown, with longish, scattered red hairs, which are deeper in hue than on the other parts.

Nomine Emiliæ dilectæ filiæ Henrici Verney, Equitis Baronetti de Cleydon, in comitatu de Buckingham, araneam hanc spectabilem, in Americâ Centrali a Bertholdo Seemann, Botanico celeberrimo, detectam in expeditione recenti, sub Henrico Kellett, Navarcho, insignire vult descriptor.

The figure, which is of the natural size, was drawn by Miss Spooner of Kentish Town.

July 8, 1856.

Dr. Gray, F.R.S., in the Chair.

The following papers were read:—

1. ON THE LAND AND FRESHWATER SHELLS OF KASHMIR AND TIBET, COLLECTED BY DR. T. THOMSON.

BY S. P. WOODWARD, F.G.S.

These shells, which I received through Dr. J. D. Hooker and Sir Charles Lyell, were collected by Dr. Thomson in 1847–8, when he accompanied Major Cunningham and Capt. H. Strachey in "one of the most adventurous journeys ever made in the Himalaya *."

The shells of continental India are nearly all distinct from those of Europe, and although far inferior in beauty and variety to those of the Asiatic Islands, have yet a marked character, owing to the admixture of tropical forms and especially to the great development of the operculated genera (*Cyclostomidæ*), which are almost unknown in our quarter of the world *.

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* Western Himalaya and Tibet; a Journey through the Mountains of Northern India. By Dr. Thomas Thomson. 8vo, London, 1852.

It was, therefore, a matter of considerable interest to ascertain what land and freshwater shells occur in the remote regions of Kashmir and Tibet, and somewhat surprising to find, that of about 22 sorts collected by Dr. Thomson, one-half were British species, and the rest of the commonest and most widely diffused Indian forms.

The species marked * are European.

**Helix pulchella*, small var., *subfossil*. Iskardo, Tibet (Europe, N. America).
*—— *costata*, large var., recent. Iskardo, 7200 feet.
**Helicella nitida*. Near Iskardo (Europe, N. America).
Bulimus candelaris, Pfr. Takht i Suliman, Kashmir.
—— *segregatus*, small var. Kashmir.
**Zua lubrica* (*subfossil*). Iskardo (Europe, N. America).
Pupa Huttoniana, Benson. Iskardo (also *subfossil*).
**Succinea Pfeifferi*, var. (*longiscata*, Morillet ?). Kashmir.
**Limnæa stagnalis*. Kashmir (Europe; N. America, Oregon).
*—— *peregra*. Pitak, Tibet; Kashmir.
——, var. *Hookeri*. Iskardo and Nubra, Tibet (18,000 feet).
*—— *auricularia*. Iskardo; Thogji Lake (*subfossil*).
——, sp. Kashmir (resembling the Australian *L. simulata*).
*—— *truncatula*, Müll. Iskardo, in damp moss (also found at Candahar, Affghanistan; at Madeira, and in the U. States).
—— *luteola*, Lam. (*succinea*, Dh.). Islamabad, Kashmir (also Prome, Burmah).
—— *acuminata*, Lam. Jamu hills.
Planorbis Coromandelicus, Fabr. Jamu hills; Islamabad, Kashmir (also Ceylon and Malacca).
—— *nanus*, Benson; *subfossil*. Tsoral Lake, Tibet (Capt. H. Strachey).
——, sp. Pitak and Iskardo; Tertse, Nubra, *in lacustrine clay*.
Paludina Bengalensis, var. Jamu hills, Kashmir.
**Valvata piscinalis* (*subfossil*). Kashmir; Tsoral Lake, Tibet.
**Cyrena fluminalis*, Müll. † (*Cashmiriensis*, Dh.). Avantipura, Kashmir.
Cyclas (*Pisidium*), sp., *subfossil*. Thogji Lake, Tibet.

These specimens have been submitted to the examination of Mr. W. H. Benson, who is unsurpassed in his critical acquaintance with Indian shells, and especially those of the Western Himalaya.

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* Mr. Benson states that *Helix Bactriana* (Hutton), found in Affghanistan, is closely allied to the European *H. strigella*.

† Varieties of this shell are found in Sicily, Palestine, the Nile, and all the rivers of the East. These varieties have been regarded as constituting about twenty distinct species; e. g. *C. Euphratica*, Bronn; *ambigua*, Dh.; *Cor*, Lam.; *consobrina*, Caill.; *triangularis*, Dh.; *Panormitana*, Bivon, &c. When fossil, it is the *C. trigonula*, Searles Wood; *C. Gemmellarii*, Phi.

Helix pulchella and *Zua lubrica* were only obtained in the condition of "dead shells" from the alluvial plains of Iskardo and Kashmir.

The *Pupa* and *Bulimus candelaris, Limnæa auricularia* and *Valvata piscinalis,* were found both recent and subfossil.

Limnæa auricularia occurred in prodigious abundance in the alluvial clay around the salt-lake of Thogji, at the height of 150 feet above its present level. There are no longer any living shell-fish in its waters, and Dr. Thomson remarks, "it may fairly be inferred that the lake was quite fresh at the time when it was inhabited by *Limnæa.*" The increase of the height of the surface of the water to the small amount of 150 feet, appears to have admitted of its discharging its waters along the course of an open valley into one of the tributaries of the Zamkar river (p. 173).

Everywhere to the northward of Tibet, from the Aral sea to Chinese Tartary, is a country of small salt-lakes having no outlet; and this region divides Northern India from the Siberian steppes, in which land and freshwater shells of *Germanic species* are known to occur.

Westward, however, the ranges of the Hindoo Koosh are prolonged through Persia to the Caucasus, and form a continuous route to the Lusitanian region.

Since the shells which have been mentioned as English species occurring in Tibet, are also common to the South of Europe, they are rather to be regarded as *Lusitanian* than Germanic species.

The land species (*Zua, Helix, Helicella* and *Succinea*) are, however, amongst the most ancient inhabitants of this island, being found in the newer-pliocene deposits of the Thames valley, associated with the same *Valvata* and the same species of *Cyrena,* and with remains of an Elephant (*E. meridionalis*) and a Rhinoceros (*R. leptorhinus*), which are not only extinct, but were succeeded by other races of the same animals (*Elephas primigenius* and *Rhinoceros tichorhinus*), before they finally disappeared from this portion of the globe.

If, therefore, the small land shells of our newer tertiaries originally migrated into this country from the East, we must ascribe to their occupancy of the lofty plains of Kashmir and Tibet a very high antiquity compared with any of the monuments which Man himself has reared, even in the country most usually regarded as the cradle of his race.

2. ON A WHALE OF THE GENUS PHYSALUS, GRAY, CAPTURED IN ORKNEY. BY ROBERT HEDDLE.

(Mammalia, Pl. XLIV. XLV.)

A Whale of the genus *Physalus* of Dr. Gray was stranded on the small island of Laman or Lambholm in Orkney on the 9th of March ultimo.

It was afterwards towed from Laman, and beached upon the shore of Scapa Bay, about two miles from Kirkwall.

The individual was a female.

The following measurements were made with the greatest care by Mr. George Petrie and myself:—

	ft.	in.
Length from point of lower jaw to notch in tail	50	0
Girth beneath pectorals	23	6
,, at 20 feet from point of lower jaw	19	3
,, close behind dorsal	11	7
,, 7 feet behind dorsal	6	0
,, close to tail	5	0
Depth at 3 feet from end of vertebral column	2	0
,, at 9 feet from end of vertebral column	3	10
Thickness at 9 feet from end of vertebral column	1	6
Thickness where thinnest	0	10
Between upper angles of pectorals (over the back)	10	0
Keel extending above from commencement of tail	16	0
Keel extending below from commencement of tail	10	0
Point of lower jaw to termination of plicæ	26	0
,, of lower jaw to reproductory organ	30	0
,, of lower jaw to umbilicus	24	6
Length of pectoral from tip to anterior junction with body	5	9
Length of pectoral from tip to posterior junction with body	4	9
Breadth of pectoral	1	7
Angle of mouth to anterior junction of pectoral with trunk	4	6
Centre of eye to anterior junction of pectoral with trunk	5	3
Tip of upper jaw (snout) to anterior junction of pectoral with trunk	14	4
Posterior curve of dorsal to posterior junction of pectoral	23	0
Base of dorsal	2	9
Height of dorsal (perpendicular from its tip)	1	9
Anterior of dorsal from snout	35	9
Posterior curve of dorsal from tip of tail	14	0
Width of tail	10	3
Depth of notch in tail	0	5
Between angles of mouth round the throat	11	0
Point of lower jaw to angle of mouth	11	3
,, of snout to angle of mouth	9	0
Depth of under jaw (including lip) where greatest	1	8
,, of under jaw 3 feet from tip	1	2
Projection of under jaw from beneath the snout	0	6
Across insertions of baleen 7½ feet from snout	3	4
Length of longest or "sample" baleen	1	8
,, of baleen at snout	0	6

	ft.	in.
Breadth of sample at base	0	9
Projection of sample over upper lip	0	6
Centre of eye to snout	9	5
,, of eye to posterior angle of blowhole	3	5
Posterior of blowholes in advance of a line joining the eyes	0	9
Eye to eye	6	10
Centre of eye to base of nearest baleen	1	8
Snout to spiracles	7	9
Each spiracle in length	0	10
Length of blind slit between spiracles	0	$8\frac{1}{2}$
Between near points of spiracles	0	$1\frac{1}{2}$
Between divergent points of spiracles	0	9
Ear behind eye	2	9
Length of depression of external ear	0	$1\frac{3}{4}$
Breadth of depression of external ear	0	$\frac{1}{4}$
Diameter of perforation of ear	0	$\frac{3}{16}$
Length of reproductory organ, including anus	3	0
Length of mammary slits	0	10

The accompanying drawings, in which every point was determined by the measurements, give a perfectly correct idea of the proportions of the animal. Consequently, further dimensions may be taken from them, due allowance being made for the curves.

The external *ear*, which was difficult of detection, consisted of an aperture capable of admitting a quill, situated in a very shallow groove of the dimensions given above. When the blubber was removed, the aperture was continued, in the immediate vicinity of a strong glandular substance, of a cylindrical form, 2 inches in diameter, passing into the skull.

The *blowholes* were situated in a hollow on the summit of a low rounded eminence, immediately in front of a depression directly over the eyes. When first seen, this latter depression was hardly apparent, and seems to owe its existence partly to the falling in of the integuments after death. The relative position of the spiracles is given in Pl. XLV. fig. 1. Between the spiracles was a shallow groove, at first sight resembling a third opening, beginning 1 inch before the anterior commissures of the spiracles, and continued to an imaginary line joining their posterior extremities.

The sides of the blowholes, which lay in close juxtaposition, could, from the elasticity of the parts, be separated to the extent of 3 or 4 inches, without affecting the extremities of the openings.

Pl. XLV. fig. 2, shows a section of one of the spiracles, laid open through the commissures, together with the retracted pad or valve, which, when set free, closes the nares, as represented in fig. 3. The pad consisted of a tough, fatty substance, and was retracted by a strong muscle, which had its attachments in a deep groove in the bone of the upper jaw. When the spiracles were partially excised, the working of this beautiful apparatus was easily exhibited by grasping with the hands the strong muscle, and drawing out the pad, which, on being set free, returned to its place in the nares with a very audible "thud." The *nares*, each 4 inches in their horizontal diameter, were protected above and at the sides by cartilaginous arches, which extended nearly to the surface of the spiracles posteriorly, and united at a point a little anterior to the section shown in figs. 4 and 5, cut transversely to the spiracles; fig. 4 representing the dilated, fig. 5 the closed access to the lungs.

The whole lining of the spiracles, breathing canals, and bronchial cavities, was of a deep black.

The septum immediately between the two *nares* was membranous, attached to the line of union of the cartilaginous arches before mentioned.

From the blowholes a ridge composed of a tendonous fatty substance extended, gradually disappearing ere it reached the snout.

The *eyes* were situated on bony prominences, which projected outwards and downwards from the line of the head and upper jaw. The external opening of the eye was about 4 inches. The *ball* 5 inches. The *conjunctiva* whitish, and the *iris* very dark brown. The excised crystalline lens measured two-thirds of an inch in diameter.

The bones of the lower jaw were covered to nearly half of their apparent depth by strong, firm lips, turned inwards superiorly. The jaw at no point projected much over the folds on the throat, and beneath the eye passed away imperceptibly into the neighbouring surface. The rounded upper surface of the lips fitted accurately, when the mouth was closed, into corresponding retuse hollows in the upper jaw, extending two-thirds of the distance from the eye to the snout.

The *baleen* extended from within 4 inches from the snout to the interior angles of the mouth. The plates were largest halfway between these points. Their exterior outline was considerably falcate, causing the points of the plates to project, where longest, 6 inches past the edge of the upper jaw.

The back part of the mouth, in the neighbourhood of the throat, was thinly covered with soft white hairs, inserted on the plaited and wrinkled skin.

Fig. 6 represents an ideal section through both jaws, partially opened, showing the palatal ridge, the projecting baleen, and the overlapping under-lips.

The tongue is represented lying in the distended pouch, and by the red lines as seen in the same pouch when drawn upwards to the jaws.

The baleen towards the snout gradually gave place to narrower plates, three or four occupying the place of one. This change of form commenced at the inside. At the snout, the plates were still more broken up, there assuming the appearance of small rods of baleen, of the thickness of a crow-quill, slightly compressed, and each tipped by a tuft of long white bristles. The baleen completed the circuit of the snout, at a distance of 4 inches within the upper lip. At the snout, the base of the baleen was 1 inch in width, gradually increasing until, where the largest plates were inserted, it attained the breadth of 9 inches, whence it decreased to a rounded point at the interior angles of the mouth. Here the baleen was entirely resolved into white hair, which took its rise from the gum, without the intervention of the quill-like rods of the anterior extremity.

The surface of the plates was longitudinally striated: their colour for one-third of their breadth from the outer margin brown, sometimes in one broad shade, sometimes more or less banded lengthwise, in either case leaving the interior surface of the plates of a yellowish-white, tinged slightly with green, occasionally dashed with pale rose-colour, with here and there a stripe of brown. From the outside no colour but the white was visible, except at the snout, where the plates and tufts, even to the outer margin, were in some places a dirty white, in some almost black.

The whole inner edges of the baleen were split up into coarse but pliant white hair.

The *gum* ("cheese" of the whalefisher) was from 2 to 4 inches thick, between which and the bone of the jaw intervened a strong callous bed of muscular substance, two-thirds of an inch thick.

The *tongue* was above of a flesh colour, and beneath, where its substance united with the lining of the pouch, of a leaden grey. It had no edges, the colour being the only means of distinguishing its upper from its under surface. The looseness of the tissue on its lower side enabled the animal to sweep the whole under surface of the baleen with the tip of the tongue, carrying any adhering food to the throat. The actual tip was not free for more than 10 inches; but, as when drawn back towards the gape, it was impossible to define the limits of the lower side of the tongue and the lining of the pouch: it seemed to be of much greater length. When retracted the tongue filled with its huge rounded mass the posterior cavity of the mouth, the tip projecting upwards, and the substance of the under side tightened from the base of the tip to the point of the under jaw.

The *throat* easily admitted the closed hand.

The *trunk* joined the head with no perceptible line of union, and, with the exception of a slight depression behind the spiracles, and the protuberance of the dorsal fin, the outline preserved an even and beautiful curve from head to tail. Beginning 2 feet before the dorsal fin, a strong ridge passed along the back, gradually diminishing till it reached the end of the vertebral column. A still bolder ventral ridge commenced 10 feet from the tail, and terminated at the same point.

The expansions of the tail were continued 2 or 3 feet along the sides of the trunk, there passing away, and giving along with the dorsal and ventral carinæ a rhomboidal form to that part of the animal. These keels consisted entirely of a fatty tendinous substance, each permeated through its entire length by strong round tendons 1 inch in diameter. On the removal of the ridges, the body beneath became of the same rounded form as the rest of the trunk.

The *epidermis* was $\frac{1}{16}$th of an inch thick, easily torn, and finely striated, except on the fins and tail, and on the jaws, lips and such parts. Where black, much of the pigment could be removed by washing, and from the inner surface was readily communicated to the fingers.

The true blubber on the back and sides measured on an average 2 inches in thickness. On the throat where the plicæ occurred, it became tendinous and tough, and, though removed, was not expected to yield much oil.

The whole posterior part of the body was beset by strong round tendons, about an inch thick, originating as flat tendons within the muscles above the pectorals.

The extent and direction of the *plicæ* on the throat and abdomen are shown in the drawings of the animal. Pl. XLV. fig. 8, represents sections of the stretched and unstretched surface of the *plicæ*. At those portions of the throat and belly which required more capability of distention than the rest, furrows supplementary to the general arrangement of the *plicæ* were introduced. These however invariably disappeared ere they reached the termination of the regular *plicæ*, and were inserted unsymmetrically. The furrows continued of their full depth to their termination on the abdomen.

Where the body of the animal was black, the furrows and their interspaces were black also, being there covered with skin of the same texture as that of the body. Where the black of the body began to *wash off* into the white of the lower parts, the furrows were black and the interspaces pure white. On the lower surface, again, where the sole apparent colour was white, the *plicæ* were found on separation to be lined with a rosy, longitudinally striated, transversely wrinkled epidermis. The depth of the furrows varied excessively, being, in some parts, when the pouch was undistended, nearly 1½ inches deep, while on the jaws and between the eye and pectoral, they were so shallow as hardly to bear measurement at all. When the pouch was distended, the plicæ were partially obliterated, their hollows becoming nearly as high as the surface of their highest prominences.

The normal breadth of the interspaces between the furrows was about 2 inches. Near the chin, however, in some places three or four occurred in the space of an inch, the skin being there very soft and pliant. The ridge between the two furrows which passed mesially along the throat and abdomen was broader than the rest, the furrows diverging slightly towards their posterior termination, where the scarcely perceptible umbilicus was situated, thereafter converging as shown in the figure.

The *reproductory organs* were situated 4 feet behind the termination of the *plicæ*, and immediately between the slits into which the *mammæ* were retracted. The *mammæ* were of a yellowish flesh-colour, 11 inches long and 4 inches in diameter, ending in lax nipples 2 inches in diameter.

The *uterus* extended in the body of the Whale 5 feet forwards from the opening. It did not contain a fœtus. The *anus* was 2 feet 10 inches behind the anterior commissure of the reproductory organ.

Decomposition prevented such a careful examination of the interior of the animal as might have been desired. The *heart* was 4 feet in length, 3 feet at its greatest breadth. The *venæ cavæ* 4 inches in diameter. The *aorta* 3½ inches thick. The *liver* resembled in consistence that of the terrestrial Mammalia, and was of great size.

Near the base of the tongue lay two large bodies of glandular appearance, much resembling the salivary glands of quadrupeds, each of which would have filled a bushel measure. The *lungs* did not appear of great proportional size; the bronchial tubes were lined with black membrane.

Near the vertebral column could be imperfectly traced the plexus of arteries which forms the reservoir of blood during the prolonged divings of the Whale. Much extravasated blood and hastening decomposition interfered with a proper investigation of its course and structure.

The vertebral formula was as follows:—

Cervical 7, Dorsal 15, Remains 40. Total 62.

Circumstances prevented me from distinguishing the lumbar from the caudal vertebræ, but the numbers above given are absolutely correct.

The last vertebra was not larger than a walnut, and part of its bulk was cartilage. Its articulation was, however, very distinct.

The last six vertebræ diminished in size very rapidly, much more decrease taking place in their dimensions than proportionally in any other part of the spine.

There were fifteen pairs of ribs. The first pair simple, the second, third and fourth with necks, directed towards, but not reaching, the bodies of the vertebræ. The rest simple.

The greatest length of the *cranium* was 11½ feet. The greatest length of the bone of the under jaw 11¼ feet.

From the tip of the pectoral to the head of the *humerus* measured 6 feet 3 inches.

The colour of the back of the head and of the sides to a line passing from the tail beneath the pectoral, black.

The jaws, and upper and under sides of both pectorals and tail, also black.

The black *washed off* at the sides into a brilliant white, of which colour were all the other parts, except, as before mentioned, the hollows of the *plicæ*.

Scattered irregularly over the back were greyish spots, from three to four in a square foot, much resembling the appearance that would have been produced by touching the skin with a slightly whitened finger. Their shortest diameter was transverse to the body of the animal, and towards their anterior end they exhibited a nucleus whiter than their general hue. It must be noted, that these spots, though sufficiently obvious under certain lights and on close inspection, were not apparent at a little distance, and did not in the smallest degree interfere with the general intense black of the upper parts.

When viewed obliquely, on the other hand, the whole dark portion of the animal seemed a dull leaden grey; a deception arising, no doubt, from the refraction of the light from the polished surface. Even when near to the object, those parts not directly opposite to the eye seemed much paler than they really were.

As a species of *Physalus* has been described as "slate-grey," and as, despite its real jetty hue, casual observers who had seen the Laman Whale, spoke afterwards of its grey colour, I have thought this circumstance worthy of mention.

Since this paper was read, the following additional notes have been addressed by the author to Dr. Gray, under the dates of July 16, Aug. 16, and Sept. 24.

16th July, 1856.

Oddly enough, I had not been two hours in Orkney ere I heard of another whale being ashore. On the first opportunity I started for Copinshay, where I found it had beached itself a week previously. The finders had already flensed it, and it was lying in a position most unfavourable for examination. The back was down, the tide alongside the body, and it was impossible to get at the dorsal fin. It is a male, and I feel sure the same species as the one I described; most probably the mate of that individual.

As it must be of great importance to compare a specimen from the same locality as, and probably the mate of, the last, I send you the only measurements I could make.

I would respectfully direct your attention to the fact, that in both this and the female formerly examined, the pectoral, measured from tip to head of humerus, is *exactly* $\frac{3}{25}$ths of the whole length of the body. This should be the length taken from the pectoral, as it is impossible to know where the true union with the body is, there being of course an anterior and posterior junction.

The head in each bears very nearly the same proportions to the whole length.

You can imagine with what keenness I made the last few cuts in the putrid mass of carrion, which exposed clearly the mass of cervical vertebræ;—two whales from the same station, of nearly the same size, at nearly the same time, alike in external appearance and in the exact proportion of pectoral, one a male and the other a female. And there the bones lay—so like, as I said, that a drawing of the one would do for a likeness of the other.

I feel sure that you will agree with me, that the variations before-mentioned do not weaken the identity of these individuals.

As soon as the bones are clean I shall pack them carefully, and send them up. I regret that the fearful state of the carcase prevented me from counting the ribs or vertebræ. Indeed it was with the utmost difficulty that I could get any one to lend a hand in securing the bones, so awful was the smell and condition, and so huge was the mass of decomposed flesh to be removed,—the whale, unfortunately, lying on its back, while no power on earth could have turned it in its then condition. However, my own repugnances vanished at the call of Science, and example works wonders.

16th Aug. 1856.

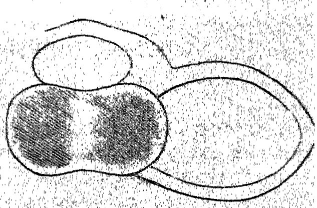
After an unusually hard day's work, I succeeded in safely detaching the cervical vertebræ of the whale ashore in Copinshay. They are at present safely lying in the sea within a tidal enclosure at Kirkwall, till the crabs and gammari, and such influences, remove the last portions of muscle from them. I shall take the whet off your curiosity by telling you that a drawing of the cervical vertebræ of the whale I formerly examined would do for these bones. Though there are some minor differences on a close examination, these are all on the lower side of the bones, viewing them from the direction opposite to the spinous processes. And I think, when you get the specimen, you will feel convinced, on comparing it with that of a Laman whale, that these minor differences are unimportant, and cannot be allowed to interfere with the specific identity of the two whales.

These differences are as follows:—In the Laman whale the superior and inferior transverse processes of the 5th cervical vertebra are united, and the lower process of the 6th short; whereas, in the Copinshay whale, the transverse processes of the 5th are not united, and the lower process of the 6th is as long as those of the 3rd, 4th, and 5th.

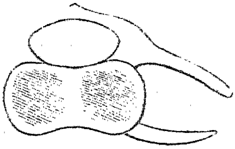
Still, with deference I submit, that when all the other resemblances are taken into account, these variations cannot be considered essential. I think it will be more easy to point out specific characters in the bones by the union or disunion of the processes of the 2nd cervical vertebra; by the comparative length of processes as regards the body of the vertebræ, and by the form and angular aperture of ring, than by the circumstance of the lateral processes after the second being united or not. At any rate, I cannot readily imagine that the union or separation of the 5th, and still less so the length of the lower process of the 6th, can be of great value. In this last, the specimen in the Zoological Gardens of Edinburgh and your own set up in the Museum differ, while they certainly resemble each other in every other way, and are evidently of the same species.

I feel sure, that drawings of the dorsal aspect of all these bones of all the species known to you will show considerable and tangible differences, especially in the comparative spread of the processes as you approach the dorsals; in their varying progression in thickness, —gradual in the Laman and Copinshay whales, sudden from the 7th cervical to the 1st dorsal in *P. antiquorum*.

Our Orkney whales seem to resemble your *P. boops* in some respects, but then the processes are longer, and the wing of the 2nd cervical in the Orkney whales with its perforation is very different from the short development of the 2nd cervical vertebra in *P. boops*. In *P. antiquorum* again, the processes *rise* from the plane of the body of the vertebræ somewhat thus:—



in the Laman and Copinshay whale, they *fall* somewhat thus :—



In fact, in some points our Orkney whales seem to connect the characters of the two sections of your genus *Physalus*, resembling, however, *P. boops* more than *P. antiquorum*. In my poor opinion, nevertheless, there are amply sufficient characters for separation, and I feel that, when placed side by side, the two specimens I have been so fortunate as to put into your hands will help much to clear up this cetacean mystery, as well as to show what characters are permanent and worthy of selection.

I have some plates of whalebone, which you shall have by and by. It varies slightly in shape and colour from that of the Laman whale, and indeed there is danger, *I think*, in forming a *specific* character from the baleen.

The colours on the whale were, according to the description of the finders, identical with those of the Laman whale; the under jaw a little wider. I shall make a sketch of the form from the measurements, and transmit it to you.

	ft.	in.
Tip of under jaw to notch in tail	45	6
Tip of upper jaw to eye.......................	8	2
„ „ to anterior of pectoral	15	0
Tip of lower jaw to genital (penis)	28	0
„ „ to anus	31	5
From pectoral to pectoral under belly	8	0
Length of pectoral to anterior junction..........	4	6
Breadth of pectoral	1	0
Length of pectoral (tip to head of humerus)	5	6
Width of tail	9	6
Length of cranium (as nearly as possible)	10	4

"Back black; belly white."

The description of the cervical vertebræ would form a useful appendix to that of the Laman whale. The measurements may be meantime useful, as showing the similarity of proportion. I feel convinced that the two individuals belong to one species, and hope that the neck vertebræ will bear out that opinion. I shall be delighted to hear your wishes in the matter, and to carry them out.

Sept. 24, 1856.

I propose despatching and booking by first packet the cervical vertebræ, &c. of the Copinshay whale. I am on the point of starting for Canada, and I trust they will reach you safe. They are in capital condition and keeping, and will, I am sure, give you assistance *in re* Rorqual. I enclose herewith some notes regarding the Caithness (Nybster) whale.

As regards the ribs of Rorquals, as exemplified in the Copinshay and Laman whale, allow me to call your own attention, and that of cetaceologists and others to the following fact.

The first pair of ribs is not articulated to the first dorsal vertebra, nor to any vertebra whatever; but the first ribs have their ends buried in a mass of ligament, which connects all the upper lateral processes of the cervical and the first dorsal vertebræ together.

No articulating surface exists on these processes on the first dorsal vertebra; the articulating surfaces are on the other hand well marked on all the other dorsal vertebræ.

I am certain that you will perceive some value in this observation, of the accuracy of which I am positive, being put on the alert by observing it in the first specimen I examined. One sees the use of the lateral apophyses and their great development in some species.

Notes on Nybster Whale.

I was unable to do more in the examination of the neck than *feel* for some of the characteristic processes. The broad wing of the second cervical was perforated by a hole as in the Copinshay and Laman whales, and in every particular that I could ascertain the vertebræ corresponded with those of these individuals. The external characters, colours, &c. also corresponded. The whale was afloat, being in a creek where the tide did not leave it. Its length, which I was too late to measure in person, was, I am assured, 65 to 68 feet; its pectoral *from the head of humerus* (the only *useful* measurement) nearly 8 feet. The length of the cranium was 15 feet. The whale was for a finner exceedingly fat, the blubber or "speck" being 8 to 10 inches in thickness. These were all the measurements I could make, from the condition of the carcase.

On my passage home, amid the thousand herring-boats of Wick, lying becalmed in a glassy sea, we were exceedingly interested by the movements of a very large Finner, apparently of the same species as the one I had just left. It rushed round us in every direction with its upper jaw above water, blowing with great violence and noise, and diving, sometimes tranquilly, sometimes in a seething wave, created by its fins and tail.

It was evidently feeding on herrings, as every now and then it would rush headlong into portions of the sea where the smooth surface was broken by the shoals of fish.

The *blowholes were at times flat and unprojecting, at other times boldly protuberant*, the animal evidently having the power of raising or depressing these organs. As the protuberance of the spiracles has been thought characteristic of species, this is worth noting. The dorsal fin was exactly outlined like those of the Rorquals previously examined. The contour of the snout or upper jaw also exactly resembled that of the Copinshay, Laman, and Nybster whales. This whale was computed by the boatmen and myself to be at least as large as the Nybster whale. I have no manner of doubt but that these four whales were of one species. Certainly the Nybster whale was not *Physalus antiquorum*, therefore *P. antiquorum* is not alone in *exceeding* 60 feet in length, a dimension supposed to be confined to that species.

The fin-whales of Orkney and Caithness, every season observed in pursuit of herrings, would seem in all probability to be of the species of which you have received portions. They are not *P. boops*, for three out of four specimens captured (and the fourth was *not* killed) agree with each other, and differ from *P. boops* in the upper and lower lateral processes of the second cervical vertebra being united, leaving a subcentral foramen.

They will no doubt prove to be of a new species, though unexamined individuals may have doubtless come ashore in Orkney over and over again.

3. DESCRIPTIONS OF SHELLS FROM THE GULF OF CALIFORNIA, AND THE PACIFIC COASTS OF MEXICO AND CALIFORNIA. PART II. BY A. A. GOULD, M.D., AND PHILIP P. CARPENTER.

Dr. Gould, the well-known author of the Rep. Invert. Mass. and the U. S. Exp. Shells, having most obligingly sent over the whole of his collections from the Pacific shores of N. America, in order to furnish materials for my Report to the British Association, there have appeared among them several shells not to be identified with recorded species. Of some of these Dr. Gould enclosed names and diagnoses. For the remainder of the following paper I am alone responsible. Most of the new species in this collection were described by Dr. Gould in the Proceedings of the Boston N. H. Society; and have been published in a separate form with three plates. I have therefore regarded this communication as a supplement to that paper, and have adopted the same title. The references apply to it, unless otherwise expressed.

P. P. C.

Bristol, June 21st, 1856.

1. PHOLADIDEA OVOIDEA, Gould.

Pholas ovoidea, Mex. & Cal. Shells, pt. 1. p. 15. pl. 15. f. 1.
Hab. San Diego (*Lieut. Green*). Mus. Gould.

2. PETRICOLA ROBUSTA, Sow.

Petricola bulbosa, Gould, p. 16. pl. 15. f. 5; B.M. Mazatlan Cat. p. 17. no. 24.

3. CORBULA POLYCHROMA, n. s.

C. t. gibbosa, transversa, solida; postice angulata, carinulis duabus, altera ad marginem ventralem, altera juxta cicatr. musc. adeuntibus; sub superficiem externam concentrice sulca-

tam, griseam, aurantia, purpureo radiata; intus purpurea, dent. card. obtusis, cicatr. musc. distinctis, sinu pallii minimo. Long. ·37, lat. ·53, alt. ·27.

Hab. In Sinu Californiensi (*Lieut. Shipley* in Mus. Cuming); Sta. Barbara (*Col. Jewett* in Mus. Gould).

Of the general appearance of *C. bicarinata*, but much less gibbous, less angulated, and highly coloured. It resembles, but appears distinct from, one of the Claiborne fossils in Mr. Nuttall's collection. Col. Jewett's specimens were all dead valves.

4. LYONSIA NITIDA, Gould.

Osteodesma nitidum, Gould, p. 17. pl. 15. f. 6=(probably) *Lyonsia Californica*, Conr. jun.

Hab. Sta. Barbara (*Lieut. Green*). Mus. Gould.

5. SEMELE FLAVESCENS, Gould.

Amphidesma flavescens, Gould, p. 19.

Semele proxima, B. M. Maz. Cat. p. 28. no. 40. Mus. Cum. pars, non C. B. Adams nec Mus. Cum. pars.

The Mazatlan species was identified from the supposed types in the Cumingian collection. On finding Dr. Gould's shell identical, it appeared extraordinary that he should have re-described one of Prof. Adams' species. In another drawer of Mr. Cuming's cabinet, however, appeared another shell, also named *Semele proxima*, C. B. Ad., which is probably the real type. It is larger and more pointed at the beaks than the present species. Several of the described species of *Semele* are extremely similar. So long, however, as they are kept distinct, the Mazatlan shells must rank under the present name, and not under that of Prof. Adams, under which they have been freely distributed.

6. SANGUINOLARIA MINIATA, Gould.

Tellina miniata, Gould, Proc. B. N. H. S. Nov. 1851; Mex. &c., p. 24. pl. 16. f. 1.

Sanguinolaria purpurea, Desh. P. Z. S. 1854, p. 346. no. 137; B. M. Maz. Cat. p. 31. no. 46.

Hab. San Juan (*Lieut. Green*).

Although I have not seen the type of Dr. Gould's shell, there can hardly be a doubt that it is the same as that of Desh., and therefore has priority over the name adopted in the B.M. Cat. While the earlier sheets of that work were passing through the press, I had only the advantage of Dr. Gould's plates, without print or dates. A more rapid intercommunication of materials between naturalists in different countries is greatly to be desired.

7. TELLINA TERSA, Gould, p. 25. pl. 16. f. 2.

Hab. Panama (*Jewett*). Mus. Gould.

8. TELLINA PURA, Gould, p. 25. pl. 16. f. 3.

Hab. Panama (*Jewett*). Mus. Gould.

9. **Tellina gemma**, Gould, p. 26. pl. 16. f. 5.

Hab. San Juan (*Green*). Mus. Gould.

10. **Strigilla carnaria**, Linn.

Tellina (*Strigilla*) *fucata*, Gould, p. 26. pl. 16. f. 4; Proc. B. S. N. H. 1851, p. 91.
Strigilla (*Tellina*) *carnaria*, B.M. Maz. Cat. p. 39. no. 66.
Strigilla miniata, Gould's Plates, MS.

11. **Donax flexuosus**, Gould, p. 21. pl. 15. f. 8.

Hab. Sta. Barbara (*Jewett*). Mus. Gould.

A comparison of types proves that this is distinct from all varieties of *D. punctato-striatus*. From the figure alone they were supposed identical; *vide* B.M. Maz. Cat. p. 44. no. 73.

12. **Donax Californicus**, Conr.

Donax obesus, Gould, p. 21. pl. 15. f. 9. (Non *D. Californicus*, Desh., *vide* B.M. Maz. Cat. p. 47. no. 76.—N.B. The *D. culminatus*, no. 72 of the same catalogue, is proved from types to be the *D. rostratus* of C. B. Ad.)

13. **Gnathodon mendica**, Gould.

Mactra mendica, Gould, Proc. B. N. H. S. Nov. 1851; Mex. &c. p. 20. pl. 15. f. 4.
Gnathodon trigona, Petit, B.M. Maz. Cat. p. 52. no. 81.

14. **Mactra exoleta**, Gray, B.M. Maz. Cat. p. 50. no. 78.

Lutraria ventricosa, Gould, p. 17.

15. **Mactra undulata**, Gould.

Lutraria undulata, Gould, p. 18. pl. 15. f. 7.

This shell is most closely related to *M. elegans*, Sow. Tank. Cat. App.; but I do not venture to unite them, without seeing the types.

16. **Tapes gracilis**, Gould, MS.

"*T. t. parva, tenui, transversa, elongato-ovata, inæquilaterali; albida, obsolete fusco radiata, et ad aream dorsalem posticam fuscata, concentrice striulata; extremitatibus rotundatis; intus candida.*

" Long. ·75, alt. ·5, lat. ·12 poll.

" Resembles *T. florida* and *T. geographica*, but is less angular and less inæquilateral."—*Gould, MS.*

Hab. San Pedro; legit *W. P. Blake* *.

17. **Tapes tenerrima**, n. s.

T. t. tenerrima, albido-fusca, obovali, compressa; marginibus æqualiter excurvatis; striulis radiantibus creberrimis, antice

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* Mr. Blake's collections, along with Dr. Webb's, do not appear to have been made during the Mexican war.

et postice fortioribus, et lirulis acutis concentricis, plus minusve distantibus, eleganter ornata ; lunula vix stria majore definita ; intus, dent. card. iii. *radiantibus, quorum valva in altera* ii. *altera* i. *bifidi sunt ; sinu pallii maximo, elongato, lateribus suberectis, parum divergentibus, apice cicatr. ant. contiguo, subrotundato ; margine vix crenulato.*

Long. ·94, lat. 1·13, alt. ·38.

Hab. Panama; legit *Col. Jewett.* Mus. Gould.

Of this extremely elegant species, the two specimens sent were broken in transit. It is recognized at once by its fragility and delicate sculpture.

18. TRIGONA TANTILLA, Gould.

Venus tantilla, Gould, p. 33. pl. 15. f. 10.

Hab. Sta Barbara (*Jewett*). Mus. Gould.

19. CYCLINA SUBQUADRATA, Hanl.—B.M. Maz. Cat. p. 66. no. 91.

Arthemis saccata, Gould, p. 23. pl. 15. f. 2.

20. CARDIUM LUTEOLABRUM, Gould, Mex. &c. p. 28.

C. xanthocheilum, Gould, MS. Cat.

21. CARDIUM CRUENTATUM, Gould, M.S.

"*C. t. parva, tenui, transversim rotundato-ovata, ventricosa, inæquilaterali ; levi et nitida ; straminea, et ad aream dorsalem posticam rufo tincta, lineis radiantibus crebris vix insculpta ; umbonibus elevatis, obtusis ; extremitatibus rotundatis ; intus citrina, rufo-sanguineo conspersa ; margine concinne crenulato.*

" Long. ·62, alt. ·62, lat. ·42.

" Compares with *C. Elenense* and *C. Mortoni.*"—*Gould, MS.*

Hab. San Pedro; legit *W. P. Blake.*

[Probably = *C. substriatum,* Conr. J. A. N. S. p. 228. pl. 17. f. 2.]

22. LUCINA ARTEMIDIS, n. s.

L. t. alba, solidiore, subrotundata, subplanata ; marginibus ventrali antice producto, postico subplanato, dorsali subangulato ; umbonibus appressis, haud prominentibus ; superficie sulcis concentricis crebris ornata ; lunula parva, vix excavata, in valva altera omnino sita, altera margine incurvata ; intus, dent. card. ii.–ii. *divergentibus, lat. ant.* i.–ii. *prominentibus, distantibus, post.* i.–ii. *valde distantibus, parvis ; cicatr. musc. ant. elongatis, serratis, post. parvis ; linea pallii a margine haud distante.*

Long. ·75, lat. ·84, alt. ·37.

Hab. ? Acapulco, teste Gould ; Mus. suo, sp. un.

Found in company with *Tellina vicina,* C. B. Ad. Has the characteristic shape and interior of *Lucina,* with the sculpture of *Dosinia.*

23. **Diplodonta orbella**, Gould.

Lucina orbella, Gould, p. 22. pl. 15. f. 3.

? = *Diplodonta semiaspera*, var.: *v.* B.M. Maz. Cat. p. 102. no. 150.

Hab. Santa Barbara (*Jewett*). Mus. Gould.

24. **Cyrena Mexicana**, var. **altilis**, Gould.

Cyrena altilis, Gould, p. 27. pl. 16. f. 5; *vide* B.M. Maz. Cat. p. 115, no. 165.

Hab. Mazatlan. Mus. Gould, Brit.

25. **Anodon ciconia**, Gould, p. 29; B.M. Maz. Cat. p. 117. no. 166.

26. **Mytilus glomeratus**, Gould, p. 29. pl. 16. f. 8.

Hab. San Francisco (*Maj. Rich.*). Mus. Gould.

27. **Modiola nitens**, n. s.

M. t. tenui, gibbosa, maxime elongata, striis incrementi conspicuis; epidermide olivaceo-cornea nitente induta; parte antica angusta, umbonibus obtusis, spiralibus, terminalibus; parte postica maxime producta; angulo diagonali indistincto, maxime tumente; marginibus, ventrali incurvato, dorsali plus minusve angulato; intus purpurea, parte ventrali albida, translucida; linea cardinali tenui, edentula.

Long. 1·05, lat. ·2–·45, alt. ·38.

Hab. California, teste Gould. Mus. suo.

Has the shape of *Mytilus multiformis* (B.M. Maz. Cat.), the internal colouring of *M. Braziliensis*, and a glossy epidermis ~~over the~~ irregular lines of growth of a lustrous olivaceous hue.

28. **Lithophagus falcatus**, Gould.

Lithodomus falcatus, Gould, Proc. B. N. H. S. Nov. 1851; Mex. &c. p. 30. pl. 16. f. 9.

=*L. Gruneri*, Phil. (New Zealand). Mus. Cum.

I do not know which name has precedence; but a comparison of types of these most remarkable shells affords no opportunity for separating the species, widely as their habitats are removed.

Hab. Monterey (*Rich.*). Mus. Gould.

29. **Byssoarca pernoides**, n. s.

B. t. subquadrata, planata, albida, epidermide spongiosa fusca induta; striis exilibus radiantibus, confertissimis; minutissime tuberculosis; umbonibus obtusis, antice sitis, area parva; intus linea dentium maxime arcuata, dentibus extremis validis, interioribus parvis, confertis, quadratis; cicatr. musc. rotundatis, politis; pagina interna, intra lineam pallii, radiatim striata; margine simplici; ligamento fossis quadratis minutis

confertis, haud dentibus convenientibus, sito, aream quoque tegente.

Long. ·68, lat. ·53, alt. ·32.

Hab. San Diego (*Dr. Webb*). Valv. unic. in Mus. Gould.

Somewhat resembling the fine variety of *B. solida*, but squarer, and known at once by the teeth and ligament. This is (under the glass) in minute pits, as in *Isognomon*, but with an extra layer covering the whole area.

30. AVICULA STERNA, Gould, p. 31. pl. 16. f. 7; B.M. Maz. Cat. p. 148. no. 203.

31. LIMA TETRICA, Gould, p. 32. pl. 16. f. 6.

Hab. La Paz (*Rich*). Mus. Gould.

32. BULIMUS PALLIDIOR, Sow.

Bulimus vegetus, Gould, p. 2. pl. 14. f. 2.

33. BULIMUS VESICALIS, Gould, p. 2. pl. 14. f. 1.

"Probably immature."—*Cuming.*

Hab. Lower California (*Rich*). Mus. Gould.

34. BULIMUS EXCELSUS, Gould, p. 3. pl. 14. f. 3.

Hab. California (*Rich*). Mus. Gould.

35. PHYSA ELATA, Gould, p. 6. pl. 14. f. 4; B.M. Maz. Cat. p. 180. no. 237.

36. TORNATINA CULCITELLA, Gould.

Bulla (Akera) culcitella, Gould, p. 4. pl. 14. f. 8.

Hab. Sta. Barbara (*Jewett*). Mus. Gould.

37. TORNATINA CEREALIS, Gould.

Bulla (Tornatina) cerealis, Gould, p. 5. pl. 14. f. 9.

Hab. Sta. Barbara (*Jewett*). Mus. Gould.

38. TORNATINA INCULTA, Gould, MS.

"*T. t. minuta, eburnea, solidula, elongato-ovali, longitudinaliter minutissime striata; spira elevata; anfr.* IV. *tabulatis; apertura* $\frac{7}{8}$ *longitudinis testæ adæquante, antice dilatata; labro inflexo, postice rotundato; columella arcuata, callosa, uniplicata.*

"*Bulla* (*Tornatina*) *inculta.* May be compared with *B. fusiformis,* A. Ad., and *B. constricta,* Gould. The spire is sometimes scarcely exserted."—*Gould, MS.*

Hab. San Diego; teste Gould.

39. HAMINEA VESICULA, Gould.

"*H. t. parva, fragili, ovato-globosa, pallide citrina, postice truncata; apertura corpus testæ duplo excedente, spiram superante,*

postice et antice late rotundata; columella valde arcuata, vix callosa.

"*Bulla* (*Haminea*) *vesicula.* About the size and general appearance of *B. rotundata,* A. Adams; not so large a body; aperture larger."—*Gould, MS.*

Hab. San Diego; legit *W. P. Blake.*

40. Nacella depicta, Hinds.

Patelloida depicta, Hinds, Ann. Nat. Hist. x. p. 82; Voy. Sulph. Moll. p. 53. no. 217.

Acmæa paleacea, Gould, p. 3. pl. 14. f. 5.

41. Omphalius Pfeifferi, Phil.

Trochus marcidus, Gould, p. 8. pl. 14. f. 11.

Comp. *Chlorostoma maculosum,* A. Ad.—Philippi's name is given on the important authority of Mr. Cuming. Dr. Gould's shell seems more like that of A. Adams; while his *Trochus Montereyi,* Kien., appears to be *T. Pfeifferi,* Phil.

42. Osilinus gallina, var.

Trochus (*Monodonta*) *pyriformis,* Gould, p. 9.

43. Livona pica, Linn.

Trochus picoides, Gould, p. 8.

This species is said to have been taken alive at Santa Barbara by Col. Jewett, who brought home five specimens. Dr. Gould, for geographical reasons, describes them as a distinct species. The exclusive peculiarities assigned to the Pacific shells are often seen in the very variable W. Indian specimens. The dead shell sent by Dr. Gould was unhesitatingly pronounced by Mr. Cuming to be the true *Trochus pica,* Linn. It did not occur in the Mazatlan collection, nor has it been found by Messrs. Cuming, Hinds, C. B. Adams, Nuttall, Kellett, Belcher, Chiron, Shipley, Hartweg, or any other of the careful explorers of the Pacific coast.

44. Phasianella compta, Gould, MS.

"*Ph. t. parva, solida, ovato-conica, imperforata, polita, cinerascente, lineis minutis olivaceis, oblique volventibus, ornata; anfr.* iv. *rotundatis, ultimo ad peripheriam subangulato, et interdum tessellatim fasciato; apertura circulari; labro tenui, albo; columella planulata, alba; faucibus callo incrassatis.*"

Variat t. rubida, ut in Ph. perforata *picta.*

Hab. Sta. Barbara (*Col. Jewett*); ~~San Diego~~ (*Dr. Webb, W. P. Blake*). Mus. Gould.

For the differences between this species and the equatorial *Ph. perforata, vide* B.M. Maz. Cat. p. 225. no. 284.

45. Crucibulum corrugatum, n. s.

C. t. compacta, conica, solida, alba; costis irregularibus angustis, haud acutis, primum paucis, postea plurimis, corrugatis; inter-

stitiis quoque corrugatis; cyatho (ut in C. spinoso *juniore) incompleto, duabus marginibus affixo, intus planato et angulato; margine a costis crenulato.*

Long. ·7, lat. ·68, alt. ·48.

Hab. Mazatlan (*Col. Jewett*); sp. unic. in Mus. Gould.

It is hazardous to describe a Calyptræid from a single specimen. This has the general aspect of *C. violascens*, with sculpture resembling *C. imbricatum* var. *Broderipii*, and a cup, which, although the shell has an appearance of normal growth, preserves the incompleteness which is characteristic of the genus in its early stage. The young state seems to have been externally like that of *Siphonaria gigas*, with few, narrow, projecting ribs. The apex is rubbed. It resembles *Calyptræa striata*, Say.

46. CREPIDULA EXPLANATA, Gould, p. 4. pl. 14. f. 7.

Crepidula perforans, Val. Voy. Ven. Moll.

Crepidula exuviata (quasi Nutt.), Jay's Cat. no. 3027.

This shell, remarkable as is the form of the adult, is normal when young. Specimens of *C. nivea* were found in the Mazatlan collection of similarly distorted form, from living in the holes of *Lithophagi*; but they never displayed the cancellations between the laminæ which appear in some specimens, but not all, of the present species. The prior name of Valenciennes is rejected, as implying an untruth.

47. MODULUS DISCULUS, Phil.

Modulus dorsuosus, Gould, p. 10. pl. 14. f. 12.

48. FOSSARUS (ISAPIS) OVOIDEUS, Gould.

Narica ovoidea, Gould, p. 7. pl. 14. f. 10.

Comp. *Fossar reticulatus*, A. Ad.; *vide* B.M. Maz. Cat. *in loco.*

Hab. ? Mazatlan (*Col. Jewett*). Mus. Gould.

49. ? LACUNA UNIFASCIATA, n. s.

? *L. t. parva, solida, conica, ad basin angulata; anfr.* v. *lævibus, parum convexis, sutura distincta; rufo-fusca, linea intensiore ad carinam suturæ convenientem, interdum maculis adjacentibus; rima umbilicali a labio subcelata; apertura ovali; apice regulari.*

Long. ·23, long. spir. ·11, lat. ·15, alt. ·45°.

Hab. Sta. Barbara (*Col. Jewett*). Mus. Gould.

This shell has the shape of *Littorina angulifera*, the general aspect of the small *Phasianellæ*, and the chink of *Lacuna*. Its operculum is unknown, all the specimens in Mus. Gould being dead.

50. CERITHIDEA ALBONODOSA, n. s.

C. t. solida, C. varicosæ *simili, compacta, fusco-purpurea, varicibus et nodulis albis, fasciis spiralibus intensioribus sæpe ornata; anfr.* xii. *parum convexis, sutura impressa; liris spiralibus* iv. *in anfr. penult. et liris creberrimis transversis vix undatis, ad intersectiones nodosis, ornata; varicibus* iii. *in* *anfr.* ii.; *apertura subquadrata, sinu minimo, labio haud expanso; operculo subplanato, nucleo mucronato, anfr. plurimis indistinctis, fusco, ad marginem tenuissimum diaphano.*

Long. ·8, long. spir. ·57, lat. ·33, div. 20°.

Hab. San Diego; legit *Dr. Webb.* Mus. Gould.

Known from *C. varicosa* var. *Mazatlanica*, by the light purplish-brown tinge, the colour of which wears off at the varices and nodules, and by the details of sculpture.

51. CERITHIDEA (? SACRATA, var.) FUSCATA, Gould, MS.

Cerithium (Potamis) sacratum, Gould, Exp. Shells, p. 60.
Pirena Californica, Nuttall, MS.

" *C. t. turrita, gracili, solida, rudi, fusco-cinerea; anfr. ad* x. *convexiusculis, plicis circiter* xvi. *longitudinalibus arcuatis, compressis, instructis, et filis ad* v. *volventibus cinctis; ultimis* iii. *varices ferentibus; apertura parva, subcirculari, basi vix effusa vel contorta; labro expanso, nitide rufo-nigricante.*

" Long. 1·25, lat. ·4 poll.

" *Potamis fuscata.* Distinguished from *P. sacrata* by its much more slender form, small size, colour of aperture, and longitudinal folds. It varies greatly in proportions, and sometimes displays a delicate, ochraceous revolving line."—*Gould, MS.*

This shell is regarded by Mr. Nuttall and myself as a variety of the very variable *C. sacrata.*

Hab. San Diego; legit *W. P. Blake.* Mus. Gould.

52. ERATO ? COLUMBELLA, Mke. Zeit. f. Mal. 1847, p. 183. no. 26.

Erato leucophæa, Gould, p. 13. pl. 14. f. 20.
Hab. Sta. Barbara (*Jewett*). Mus. Gould.

53. EURYTA FULGURATA, Phil.

Terebra arguta, Gould, p. 7. pl. 14. f. 19; *vide* B.M. Maz. Cat. *in loco.*

54. CONUS RAVUS, Gould, p. 13. pl. 14. f. 21.

Hab. Sta. Barbara (*Jewett*). Mus. Gould.

55. CONUS PURPURASCENS, Sow.

Conus comptus, Gould, p. 14. pl. 14. f. 23.

Dr. Gould's type specimen is pronounced by Mr. Cuming to be a worn young specimen of that previously described. It is probably, as Dr. G. supposes, the *C. achatinus* of Menke's catalogue.

56. CONUS PUSILLUS, Gould, p. 15. pl. 14. f. 22.

Hab. Mazatlan (*Jewett*). Mus. Gould.

57. OBELISCUS ACHATES, Gould.

Odostomia achates, Gould, p. 12. pl. 14. f. 13.
Comp. *Obeliscus clavulus*, A. Ad.
Hab. Mazatlan (*Jewett*). Mus. Gould.

58. ODOSTOMIA GRAVIDA, Gould, p. 11. pl. 14. f. 14.
Hab. Sta. Barbara (*Jewett*). Mus. Gould.

59. CHEMNITZIA TENUICULA, Gould, p. 10. pl. 14. f. 15.
Hab. Sta. Barbara (*Jewett*). Mus. Gould.

60. CHEMNITZIA TORQUATA, Gould, p. 11. pl. 14. f. 16.
Hab. Sta. Barbara (*Jewett*). Mus. Gould.

61. SIGARETUS DEBILIS, Gould, p. 6. pl. 14. f. 17.
Hab. La Paz (*Lieut. Green*). Mus. Gould.

62. FASCIOLARIA BISTRIATA, n. s.

F. t. regulari, tenui, aurantio-fusca, epidermide tenui induta; anfr. ix. *quorum duo nucleosi læves, apice mamillato, subdeclivi; normalibus convexis, sutura distincta; costis transversis (in anfr. penult.* xvi.) *tumentibus sed planatis, attingentibus, interstitiis parvis, ad basin evanidis; lirulis acutis spiralibus (in anfr. penult.* vi.) *et inter eas striulis crebris, costis transeuntibus, eleganter ornata; apertura ovali, albida; labro acuto, secundum lirulas intus sulcato; pariete secundum lirulas plicato; labio ad basin parvo, vix plicato; canali elongato, subrecto.*

Long. 1·07, long. spir. ·42, lat. ·48, div. 50°.
Hab. Panama, teste Gould; sp. unic. in Mus. suo.
The columellar folds in this very elegant and delicate shell are indistinct, but are compensated by the continuations of the spiral lirulæ over the body whirl.

63. OLIVELLA INTORTA, n. s.

O. t. parva, ovoidea, subtumente; sutura vix sulcata; albido-grisea, fascia indistincta subsuturali olivacea, flammulis et maculis purpureo-fuscis plus minusve ornata; apertura antice aperta, postice angusta; callositate parietali ad suturam penultimam producta; columella maxime intorta, plica ad basin acuta, in pariete duabus sæpe indistinctis; extus, linea spirali antica unica.

Long. ·52, long. spir. ·17, lat. ·26, div. 60°.
Hab. San Juan; legit *Dr. Green*. Mus. Gould. Item, loc. incert. Mus. Cuming.
A well-marked species, resembling the West Indian *O. bullata*, on a much larger scale. The specimens vary in tumidity and height of spire. The parietal callosity extending over the penultimate whirl hides the colour of the spire.

64. MARGINELLA JEWETTII, n. s.

M. t. parva, alba, ovoidea; spira depressa, sutura celata, antice angustiore, postice tumidiore; labro vix incrassato, medio in-

flexo, supra calloso, callositate suturam et anfr. penult. tegente; labio iv.*-plicato, et supra dentato.*

Long. ·18, long. spir. (super suturam) ·03, lat. ·12, div. 120°.

Hab. Sta. Barbara, rarissime (*Col. Jewett*). Mus. Gould.

Closely resembling the small white species from the Panama, W. Indian and N. African provinces; but distinguished from all in shape and plications.

65. Columbella Santa-Barbarensis, n. s.

C. t. elongata, subconica, fusco-aurantia, albido varie picta; epidermide tenui, transversim striata, munita; anfr. vii. *subplanatis, suturis distinctis, spiraliter striatis, striis distantibus; apertura subquadrata, intus violascente; labro acutiore, vix sinuato, vix denticulato; labio parvo, plica unica canali contigua; anfr. primis sæpe decussatis.*

Long. ·36, long. spir. ·18, lat. ·15, div. 40°.

Hab. Sta. Barbara (*Jewett*). Mus. Gould.

This elegant species is known by its faintly striated surface, violet-tinted, open mouth, and the extremely minute labral denticles. The discovery of this and other species of the genus in the Upper Californian province, corrects the error as to its northern limit in Forbes' Zoological Map. The markings of the two specimens sent vary, as in the next species.

66. ? Nitidella Gouldii, n. s.

N. t. parva, elongata, conica, lævi, circa basin spiraliter striata; anfr. vii. *subplanatis, suturis distinctis; albida, aurantio varie picta; apertura subquadrata, labro sinuato, subacuto, intus conspicue dentato; labio parvo, vix crenato; apice interdum decollato.*

Long. ·32, long. spir. ·15, lat. ·15, div. 37°.

Hab. Sta. Barbara (*Jewett*). Mus. Gould.

Closely resembling *N. cribraria*; distinguished from *C. Sta.-Barbarensis* by the smooth whirls and apex, and the conspicuous labral teeth. The two specimens examined differ too much from each other in colour-markings to found specific characters upon these features.

67. Fusus ambustus, Gould, p. 12. pl. 14. f. 18.

Hab. Mazatlan (*Green*). Mus. Gould.

68. Purpura patula, Linn.

Purpura pansa, Gould, p. 33.

This shell, occurring unexpectedly to Dr. Gould on the Pacific shores, was, according to his theory, described as a fresh species; the few, poor, young specimens at his disposal affording him supposed points of distinction. These however do not apply to the fine series which has been examined from the Mazatlan collection. *Vide* B.M. Cat. *in loco*.

4. MONOGRAPH OF THE SHELLS COLLECTED BY T. NUTTALL, ESQ., ON THE CALIFORNIAN COAST, IN THE YEARS 1834–5.

BY PHILIP P. CARPENTER.

The following shells were collected by Mr. Nuttall at various stations from Oregon to San Diego. Most of them were described by T. A. Conrad in the Journal of the Academy of Natural Sciences of Philadelphia, vol. vii. part ii. 1837 (Read, Jan. and Feb. 1837). This paper is accompanied by four coloured plates; but the descriptions are in English. References are now given as far as known, and descriptions of a few overlooked species. The types are destined ultimately for the British Museum, where many of them are already to be found. They are at Mr. Nuttall's residence, Nut Grove, near Rainhill, Lancashire. Several of the species are only known by references in the Catalogue of Dr. Jay's Collection, U. S. A.

PHILIP P. CARPENTER.

Bristol, June 1856.

Genus PARAPHOLAS, Conr.

"*Testa Pholadiformis; marginibus dorsalibus supra valvis late expansis; valvis accessoriis* ii., *subæqualibus, elongatis, altera ab umbone ad marginem posticum directa, altera ad basim affixa; area cardinali solida; cicatr. musc. adduct. valde elongatis.*

"Distinguished by the accessory valves, which appear soldered to the shell, elongated muscular impressions; form of the pallial sinus and valve on the base."—Journ. 1849, p. 214.

It is difficult to know what limits Conrad intended for this genus. It is used in the B.M. Maz. Cat. for the tripartite *Pholadideæ* with persistent cups, on the authority of Woodward's Manual; but Conrad uses it, besides the following species, in Journ. Jan. 1850, for *Pholadidea melanura*, which he calls *Parapholas bisulcata*; while the *Parapholas acuminata* (*vide* B.M. Maz. Cat. p. 12. no. 18) he calls *Penitella Wilsonii* *.

1. PARAPHOLAS CALIFORNICA, Conr.

Pholas Californica, Conr. Journ. p. 236. pl. 18. f. 5, 6; Sow. Thes. Conch. *in loc.*

=*Pholas Janellii*, Desh. Rev. Zool. 1839, teste Gould.

Parapholas Californica, Conr. Journ. 1849, p. 214.

Hab. Sta. Barbara, rupibus argillaceis. Mus. Nutt., Cum., Brit., Jay.

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* In the same paper is described a genus *Solecardia* (species) *eburnea*; and then occur the following additional synonyms :—

Petricola sinuosa, Conr. = *P. robusta*, Sow.
Pholadopsis pectinata, Conr. = *Triomphalia*, sp., Sow.
Triton perforatus, Conr. = *T. Chemnitzii*, Gray = *Argobuccinum nodosum*, Chemn.
Oliva propatula, Conr. = *O. testacea*, Lam.

The animal forms a tube of indurated clay, represented at f. 6 (7, err. typ.), extending nearly to the surface of the bed in which it burrows.

2. Parapholas penita, Conr.

Pholas penita, Journ. p. 237. pl. 18. f. 7.

Parapholas penita, Conr. Journ. 1849.

=*Pholas concamerata,* Desh. Rev. Zool. 1839.

Hab. Sta. Barbara, una cum *P. Californica.* Mus. Gould, Jay.

Is much smaller than *P. Californica*; without an internal callus at the posterior hinge margin; and with a differently shaped apophysis.

Subgenus Platyodon, Conr.

Testa Myæ *simili, sed dente cardinali minus prominente, magis dilatata; linea pallii sinu antice angusto, postice profundo. Animal siphonibus duabus haud divergentibus, valvulis quatuor testaceis extremitates claudentibus.*

3. Platyodon cancellata, Conr. Journ. p. 236. pl. 18. f. 2; H. & A. Ad. Gen. vol. ii. p. 354.

Hab. Sta. Barbara; inter paludes limosas, et rupes. Mus. Nutt., Brit., Jay.

Subgenus Cryptodon, Conr.

Testa Lutrariæ *simili, sed margine cardinali profunde canaliculato. Animal siphonibus duabus haud divergentibus, valvulis corneis duabus extremitates claudentibus.*

4. Cryptodon Nuttallii, Conr. Journ. p. 235. pl. 18. f. 1.—(Non *Mactra Nuttallii,* Reeve, Conch. Ic. pl. 21. sp. 125.)

Hab. Sta. Barbara, in paludes, inter fluxum maris. Mus. Nutt.

? =*Cypricia Nuttallii,* quasi Conr. B.M.

5. Sphænia Californica, Conr. Journ. p. 234. pl. 17. f. 11. (1834).

=*Cryptomya Californica,* Conr. loc. cit. 1849, p. 208; H. & A. Ad. Gen. vol. ii. p. 359.

Hab. Sta. Barbara, inter paludes, infrequens. Mus. Nutt., Jay.

Conrad describes the pallial line as "without a sinus, but forming a right angle posteriorly;" in Mr. Nuttall's specimen, however, the sinus may be traced, though very faintly marked.

6. Thracia curta, Conr. Journ. p. 248. pl. 19. f. 8.

Hab. Sta. Barbara. Mus. Nuttall.

A fine pair (not a single valve only, as stated by Conrad) is in Mr. Nuttall's cabinet. It is remarkable for its great squareness at the posterior end.

Genus MYTILIMERIA, Conr. Journ. p. 246.

Testa æquivalvis, subovalis, tenuis; umbonibus subspiralibus; cardine edentulo, cavitate parva, lineari, sub umbonibus sita; cicatricibus muscularibus ii. *minoribus; sinu pallii lato, obtuso.*

Apparently a subgenus of *Lyonsia*, with the regular form of *Crenella* = *Mytilimeria*, H. & A. Ad. Gen. vol. ii. p. 363, pars.

7. MYTILIMERIA NUTTALLI, Conr. Journ. p. 247. p. 19. f. 5.

Hab. California, inter spongias et radices fucorum, mari profundo. Mus. Brit., Jay.

8. LYONSIA CALIFORNICA, Conr. Journ. p. 248. pl. 19. f. 20. (non 21.)

? =*Lyonsia nitida*, Gould. Mus. suo.
Hab. Sta. Barbara. Mus. —— ?

9. PERIPLOMA ARGENTARIA, Conr. Journ. p. 238. pl. 18. f. 8.

Hab. In limine Stæ. Diego, inter paludes limosas. Mus. Cuming, Jay, Gould.

=*Periploma planiuscula*, Sow. 1834, teste Gould.

10. PANDORA PUNCTATA, Conr. Journ. Phil. 1834, p. 228. pl. 17. f. 1.

Hab. Sta. Barbara; valvæ solitariæ. Mus. Cuming, Nutt.

Genus MACHÆRA, Gould.

=*Siliqua*, Megerle :=*Leguminaria*, Schum.

11. MACHÆRA LUCIDA, Conr.

Solecurtus lucidus, Conr. Journ. p. 231. pl. 17. f. 8.
=*S. radiatus*, Gould, non Linn. (teste Conr. 1849).
Siliqua lucida, Conr. Journ. Aug. 1849.
Hab. Sta. Barbara, rarè. Mus. Nutt., Brit.

Closely resembling the European species; but, according to Conrad, differing from this, and agreeing with that of New England. The rib is seen through the shell, resembling a yellowish ray.

12. SOLECURTUS NUTTALLII, Conr. Journ. p. 232. pl. 17. f. 9.

Siliqua Nuttallii, Conr. Aug. 1849.
= *S. maximus*, Gould, non Wood (teste Conr. 1849) = Wood, pl. 31. f. 3, teste Gould, 1855.
=*S. splendens*, Chenu (teste Conr. 1849).
Hab. In æstuario fluminis Columbiæ, "near Point Adams," paludibus. Mus. Nutt., Jay.

Subgenus CULTELLUS, Conr.

"*T. convexa, marginibus ventrali et dorsali parallelis; marginibus antico et postico subæqualibus, valde hiantibus; dentibus plerumque* ii. *in utraque valva; costæ internæ carens.*"

Ex. *S. caribbæus, S. Dombeii, S. strigillatus*, &c., Journ. p. 233. pl. 17. f. 10.

13. SOLECURTUS SUBTERES, Conr. Journ. p. 233. pl. 17. f. 10.
Hab. Sta. Barbara. Mus. Nutt., Brit., Jay.

14. SOLECURTUS CALIFORNIANUS, Conr. Journ. p. 233. pl. 18. f. 3.
Hab. Sta. Barbara, inter paludes limosas; frequens. Mus. Nuttall, Brit., Jay.

15. SANGUINOLARIA PACIFICA, Conr.
Psammobia pacifica, Conr. Journ. p. 241. pl. 18. f. 13.
Hab. San Diego, inter arenam, mari subprofundo. Mus. Brit.
The figure displays no radiating lines, a thin cardinal margin, and a solitary tooth. It appears to be a thin Tellinoid shell.

16. SANGUINOLARIA NUTTALLII, Conr. Journ. p. 230. pl. 17. f. 6.
Hab. Sta. Diego, in paludibus. Mus. Nutt., Cum., &c.
= *Psammobia decora*, Hinds, Voy. Sulph. Moll. *in loco.*
This very well-marked species, approaching *Solecurtus*, was overlooked by Mr. Hinds, notwithstanding his usual care.

17. SANGUINOLARIA CALIFORNIANA, Conr. Journ. p. 231. pl. 17. f. 7.
Hab. In æstuario fluminis Columbiæ, paludibus limosis. Mus. ?

S. CALIFORNIANA, var. A, Conr.
Testa alba, æquilaterali.
? An eadem species. Mus. Nuttall.

18. SANGUINOLARIA RUBRO-RADIATA, Conr. [? ubi.]
Appears allied to *Psammobia.*
Hab. California. Mus. Nuttall.

19. SEMELE RUBROLINEATA, Conr.
Amphidesma rubrolineata, Conr. Journ. p. 239. pl. 18. f. 11.
= *Semele simplex*, A. Ad.
This species, of which Mr. Nuttall had not retained a specimen, fortunately reappears in Dr. Gould's collection, and is pronounced by Mr. Cuming identical with Mr. Adams's shell.
Hab. San Diego, mari profundo. Mus. Cuming, Gould.

20. **Semele decisa**, Conr.

Amphidesma decisa, Conr. Journ. p. 239. pl. 19. f. 2; Rve. Conch. Ic. pl. 4. sp. 24.

Hab. Una cum præcedente. Mus. Cuming, Nuttall, Brit., Jay.

Of this very characteristic shell, the length is stated by Conrad (probably erroneously) to be 5 inches. It grows however to a large size.

= *Amphidesma roseum*, Brod. & Sow., teste Gould.

21. **Cumingia Californica**, Conr. Journ. p. 234. pl. 17. f. 12.

Hab. Sta. Barbara, infrequens; Mazatlan, do. Mus. Cum., Brit., Jay.

22. **Tellina alta**, Conr. Journ. p. 258; Hanl. Rec. Shells, p. 71; Jay's Cat. no. 520.

Hab. Sta. Barbara. Mus. Jay.

According to Conrad, this shell has the outline of a *Capsa*, Enc. Méth. pl. 231. f. 1. Mr. Nuttall and I, however, may have erred in regarding the shell described in P. Z. S. 1855, p. 230, as ? *Scrobicularia biangulata* as being distinct.

23. **Tellina edentula**, Brod. & Sow. Zool. Journ. iv. p. 363; Zool. Beech. Voy. p. 154. pl. 41. f. 5, et pl. 44. f. 7; Mid. Mal. Ross. p. 62.

This species grows to a very large size, and is eaten by the Chinhooks at the estuary of the Oregon.

Hab. Oregon. Mus. Nuttall.

24. **Tellina nasuta**, Conr. Journ. p. 258; Hanl. Rec. Shells, p. 71; Sow. Thes. Conch. p. 314. pl. 64. f. 224; Middendorff, Siber. Reise, p. 256. no. 50. pl. 23. f. 6–11; Jay, Cat. no. 633.

Hab. San Diego (*Nuttall*), teste Conrad; Tugurbusen, Okotsk Sea (*Middendorff*). Mus. Jay.

25. **Tellina secta**, Conr. Journ. p. 257; Hanl. Rec. Shells, p. 67.

= *T. ligamentina*, Desh. in Guér. Mag. 1843, pl. 81, teste Jay, Cat. no. 633.

Hab. San Diego, inter paludes limosas. Mus. Nuttall, Jay.

26. **Donax Californicus**, Conr.

Donax Californica, Conr. Journ. p. 254. pl. 19. f. 21 (non *D. Californicus*, Desh., *vide* B. M. Mazatlan Cat. p. 47. no. 76).

Hab. Sta. Barbara, inter arenam. Mus. Nuttall, Brit., &c.

This is a small, gibbous shell, resembling *D. punctatostriatus*, but without the dots. The *D. Californicus* of Deshayes is the young state of the white variety of the *D. Conradi* of the same author.

= *Donax obesus*, Phil.

27. Mactra Californica, Conr. Journ. p. 240. pl. 18. f. 12.

Hab. In paludes limosas, inter fluxum maris, Sta. Barbara, rarius. Mus. Gould.

Allied to *M. exoleta*, but much smaller, flatter, and more transverse.

28. Mactra planulata, Conr. Journ. p. 240.

Hab. Una cum præcedente. Mus. ?

29. Petricola Californica, Conr.

Saxicava Californica, Conr. Journ. p. 256. pl. 20. f. 9.

Petricola Californica, Conr. Journ. Aug. 1849; Desh. B.M. Cat. Ven. p. 208. no. 3.

= *Petricola arcuata*, Desh. Rev. Zool. Cuv. 1839, p. 358.

Hab. Sta. Barbara, San Diego, &c. Mus. Gould, Cuming.

Var. = *Saxicava carditoides*, Conr. Journ. p. 255. pl. 20. f. 8: = *Petricola carditoides*, Conr. Journ. Aug. 1849.

Comp. *Petricola cylindracea*, Desh. Rev. Zool. Soc. Cuv. 1839, p. 358; B.M. Cat. Ven. p. 208. no. 5.

The *S. carditoides*, constituted by Conrad for a single valve found near Sta. Barbara, is regarded by him as identical with the *P. cylindracea* of Deshayes. After a comparison of a large series of specimens belonging to Dr. Gould and Mr. Cuming, I have, with Mr. Nuttall's consent, united Conrad's two species; retaining the latter name, though least expressive, because already adopted by Deshayes for his own *P. arcuata*. Dr. Gould regards both the *P. arcuata* and *P. cylindracea* of Desh. as being identical with Conrad's *P. carditoides*; but I have not sufficient confidence that such is the case to venture on uniting them.

30. Rupellaria lamellifera, Conr.

Venus lamellifera, Conr. Journ. p. 251. pl. 19. f. 19.

= *Venerupis Cordieri*, var. β, Desh. B.M. Cat. Ven. p. 191, no. 1.

Petricola Cordieri, Desh. Rev. Zool. Soc. Cuv. 1839, p. 358; Mag. Zool. pl. 18.

Hab. San Diego. Mus. Cuming, Nuttall, Gould.

On comparing the solitary valves on which Conrad's species was founded, with a series of very variable specimens in Dr. Gould's and Mr. Cuming's collections, there appears scarcely a doubt of its identity with that of Deshayes.

31. ? Tapes tumida, Conr.

T. t. subquadrata, valde inæquilaterali, alba, huc et illuc aurantio punctata; postice latiore, tumente; costulis plurimis rotundatis radiantibus, haud extantibus, interstitiis subæquantibus; liris concentricis satis confertis, rotundatis, secundum costas pectinatis; ligamento haud conspicuo, area minima, sulcis duabus circumeuntibus; lunula minima, parum definita; dent. card. in utraque valva iii. *valde divergentibus, quorum centrales, et in valva altera posticus bifidi sunt; margine cardinali interno* *excavato; sinu pallii haud parvo, rotundato; margine tenue crenato.*

Long. ·62, lat. ·74, alt. ·4.

Hab. Sta. Barbara, legit *T. Nuttall*; sp. unic. Museo suo.

Mysia tumida, Conr., Nutt. MS.

This shell has the general shape and aspect of a *Tapes*, with a sculpture resembling *Venus* (*Chione*) *gnidia* and its congeners, and a hinge not exactly corresponding with any of the defined genera. The anterior teeth are short and divergent; the central teeth are bifid and interlock; the posterior tooth is bifid in one valve, single in the other, with an obscure lateral tooth inside the almost concealed ligament. The pallial sinus is not so large as in *Tapes*.

32. TAPES STRAMINEA, Conr.

Venus straminea, Conr. Journ. p. 250. pl. 19. f. 14 (non 15).

Tapes straminea, Sow. Thes. Conch. p. 699. pl. 151. f. 151.

Chione straminea, Desh. B.M. Cat. Ven. p. 141. no. 66.

= *Venus dispar*, Gould, MS.

Hab. Sta. Barbara et San Diego. Long. 1·5 poll. Mus. Brit. Nuttall, Cuming, &c.

This belongs to a group of closely allied species intermediate between *Venus* and *Tapes*, and is replaced in the Mexican fauna by *Tapes histrionica* (B.M. Mazatlan Cat. p. 76. no. 109).

Genus SAXIDOMUS, Conr.

Saxidomus, Conr. Journ. p. 249; Desh. B.M. Cat. Ven. p. 186.

" *Testa æquivalvis, postice hians; cardine, valva dextra dentibus compressis* iv.-v., *valva sinistra* iv.; *cicatricibus muscularibus* ii. *magnis, rotundatis; sinu pallii profundo.*

" Differs from *Tapes* in its gaping extremity and rounded pallial sinus." This description is enlarged by Deshayes so as to include eight species.

33. SAXIDOMUS NUTTALLI, Conr. Journ. p. 249. pl. 19. f. 12; Desh. B.M. Cat. Ven. p. 188. no. 4.

This species inhabits the Californian coast as far as San Diego; where it is found burrowing into soft clay-stone, along with *Pholades*, *Cumingiæ*, &c. The differences between this and the sub-boreal species, *S. giganteus* (Desh. B.M. Cat. Ven. p. 187. no. 2; quoted by Middendorff from Sitka and Kamtschatka), appear extremely slight. They are united by Jay.

Genus TRIGONA, Megerle.

Trigona, Megerle, Desh. B.M. Cat. Ven. p. 45.

= *Trigonella*, Conr.: indicated in Journ. 1837, p. 253; described in Journ. 1849, p. 213.

34. TRIGONA CRASSATELLOIDES, Conr.

Cytherea (*Trigonella*) *crassatelloides*, Conr. Journ. p. 253. pl. 19. f. 17; Hinds, Voy. Sulph. Moll. p. 65. pl. 21. f. 1.

Trigonia crassatelloides, Desh. B.M. Cat. Ven. p. 46. no. 1; B.M. Mazatlan Cat. p. 58. no. 86.

Hab. Sta. Barbara, San Diego, &c. Mus. Gould, Nuttall, Cuming, Brit. &c.

This shell attains the length of 7 inches, and is found about a foot deep in the sand.

35. DOSINIA CALLOSA, Conr.

Cytherea callosa, Conr. Journ. p. 252 (non *Chione callosa*, quasi Conr., Desh. B.M. Cat. Ven. p. 135. no. 48).

> " *D. t. subovata, subdepressa, alba; costis concentricis, confertis, planatis, huc et illuc antice et postice bifurcantibus; intus irregulariter callosa, margine tenuiore; sinu pallii valde impresso, profundo.*"

Long. 2 poll.

Hab. Sta. Barbara. Mus. Nuttall.

Mr. Nuttall found numerous valves of this species; but, although so thick, they were always broken by gulls. It is said by Conrad to resemble the fossil *C. erycinoides*.

36. VENUS NUTTALLI, Conr. Journ. p. 250. pl. 19. f. 15 (non 14); Hanl. Rec. Shells, p. 113; Wood, Suppl. pl. 16. f. 46.

Chione Nuttallii, Desh. B.M. Cat. Ven. p. 135. no. 47.

+ *Chione callosa*, Desh. loc. cit. no. 48 (pars quidem Californiensis):—non *Venus callosa*, Conr.

Hab. Sta. Barbara et San Diego. Long. 2 poll. Mus. Brit., Nuttall, Cuming, &c.

37. VENUS CALIFORNIENSIS, Brod. Proc. Zool. Soc. 1838, p. 43; et auct.

= *Venus Californiana* (quasi Sow.), Conr. Journ. p. 251. pl. 19. f. 16 (non 15).

Chione Californiensis, Desh. B.M. Cat. Ven. p. 133. no. 44.

Hab. San Diego, inter paludes limosas. Mus. Brit., Cuming, Nuttall, &c.

= *Venus leucodon*, Sow. teste Desh. loc. cit.

38. VENUS SIMILLIMA, Sow. Thes. Conch. p. 708. pl. 153. f. 17, 18.

Chione simillima, Desh. B.M. Cat. Ven. p. 133. no. 43.

Mus. Nutt. California.

39. VENUS (CHIONE) EXCAVATA, n. s.

> *V. t. cordata, subtumida, solida, alba, ad umbones antice incurvatas, appropinquantes, fusca; costis radiantibus, rotundatis, interstitiis æquantibus, postice parvis, acutioribus, antice confertis, rotundatis; lamellis concentricis nitentibus, crebriori-*

bus, eleganter crenatis, ornata; lunula tumente, radiatim costata; area magna, planata, excavata; carinis acutis definita; intus alba, postice fusco-purpurea; dent. card. ii.-iii. *validis; sinu pallii minimo; epidermide tenui, sericea.*

Long. 1·34, lat. 1·5, alt. ·9.

Hab. San Diego; legit *T. Nuttall*; sp. unic. in Mus. suo.

This exquisitely beautiful species belongs to the group of *V. amathusia*, &c. Although only one specimen is known, its characters are not such as to accord with the numerous similar species already described.

40. CYPRICARDIA CALIFORNICA, Conr. Journ. p. 236. pl. 18. f. 4.

Hab. Sta. Barbara et San Diego; rupibus argillaceis, inter fluxum maris; una cum Pholadibus. Mus. Nuttall.

= *Cypricardia Duperryi*, Desh. in Guér. Mag. 1841, teste Gould.

41. CHAMA EXOGYRA, Conr. Journ. p. 256; Reeve, Conch. Ic. sp. 38. pl. 7.

Hab. Sta. Barbara, San Diego, &c. in rupibus, glomerantes. Mus. Nuttall, Gould, Cuming, Brit.

One of Dr. Gould's specimens, probably belonging to this species, is dextral.

42. CHAMA ? FRONDOSA, var. ? MEXICANA, jun., B.M. Maz. Cat. p. 87. no. 121.

Hab. Sta. Barbara. Mus. Nuttall.

One fine young specimen appears to belong to this species.

43. CHAMA PELLUCIDA.

Hab. Sta. Barbara. Mus. Nuttall.

One very fine specimen in company with the other species.

44 *a*. CARDIUM NUTTALLII, Conr. Journ. p. 229. pl. 17. f. 3.

Hab. "Straits of San Juan da Fuco," paludibus luteosis. Mus. Nutt., Brit.

The natives cross a little peninsula to get to the place where this fine species lives, which they use as food, being of flavour superior to the English kinds. It grows so large that Mr. Nuttall found a squaw baling out a canoe with one of the valves.

44 *b*. CARDIUM CALIFORNIANUM, Conr. Journ. p. 229. pl. 17. f. 4.

Hab. Sta. Barbara; valvæ solitariæ, rarè. Mus. ?

= *C. Nuttallii*, var. teste Mid.; non *C. Californiense*, Desh.

45. CARDIUM QUADRAGENARIUM, Conr. Journ. p. 230. pl. 17. f. 5.

Hab. Sta. Barbara, rarè. Mus. Jay.

? = *C. luteolabrum sive xanthocheilum*, Gould.

46. **Cardium substriatum**, Conr. Journ. p. 228. pl. 17. f. 2.

Hab. San Diego, paludibus luteosis. Mus. Nutt.

Closely resembles the young of *C. elatum*: differs from *C. Mortoni*, Conr., in being less ventricose, and in its striæ and serrate margin.

47. **Lucina bella**, Conr. Journ. p. 254. pl. 19. f. 11.
= *L. pecten*, var. teste Jay.

Hab. San Diego, in paludes limosas, haud rarè. Mus. ? Jay.

48. **Lucina Californica**, Conr. Journ. p. 255. pl. 20. f. 1.

Hab. San Diego, una cum præcedente; rarè. Mus. Jay.

49. **Lucina Nuttalli**, Conr. Journ. p. 255. pl. 20. f. 2.

Hab. San Diego, una cum præcedente. Mus. Nuttall.

This beautiful species is recognized by its winged growth.

50. **Diplodonta orbella**, Gould.

Lucina orbella, Cal. & Mex. Shells, p. 22; vide B.M. Maz. Cat. p. 102. no. 150; P. Z. S. 1856, p. 202.

Hab. Santa Barbara, in æstuario limoso. Mus. Nuttall, Gould.

51. **Anodon Nuttalliana**, Lea, Trans. Am. Phil. Soc. vol. vi. pl. 20. f. 62.

Hab. In flumine Wahlamat, Oregon. Mus. Nutt., Jay.

52. **Anodon Oregonensis**, Lea, Trans. Am. Phil. Soc. vol. vi. pl. 21. f. 67.

Hab. In flumine Wahlamat, Oregon. Mus. Jay.

53. **Anodon Wahlamatensis**, Lea, Trans. Am. Phil. Soc. vol. vi. pl. 20. f. 64.

Hab. In flumine Wahlamat, Oregon. Mus. Jay.

54. **Modiola capax**, Conr. Journ. p. 242; B.M. Mazatlan Cat. p. 120. no. 170, q. v.

Hab. San Diego, inter paludes limosas. Mus. Brit., Cuming, Gould, &c.

55. **Modiola recta**, Conr. Journ. p. 243. pl. 19. f. 1.

Long. 2·1, lat. ·94, alt. ·8.

Hab. Sta. Barbara, rarius. Mus. Gould.

The measurements are taken from a very fine specimen in Dr. Gould's collection, in which the epidermis is posteriorly clothed with squamose hairs.

56. MYTILUS EDULIS, var. LATISSIMUS.

M. e. t. curta, triangulari, latissima.

Long. 1·1, lat. ·77, alt. ·5.

Hab. California Superior; legit *T. Nuttall*: sp. unic. in Mus. suo.

Among the specimens of this species brought by Mr. Nuttall, some appeared exactly like the normal European type; one presented the well-known thin striped variety; and that above indicated presents the extreme broad stunted form occasionally seen in this country. All the specimens present the subepidermal apical denticles noticed by Middendorff as (*i. e.* in form and number) characteristic of the species.

57. MYTILUS CALIFORNIANUS, Conr. Journ. p. 242. pl. 18. f. 15.

Hab. Santa Barbara, Monterey, San Diego, in rupibus. Mus. Gould, Jay.

58. MYTILUS BIFURCATUS, Conr. Journ. p. 241. pl. 18. f. 14.

Hab. ? California. Mus. Gould, Jay.

This shell is stated by Conrad to inhabit the "Sandwich Islands (Ouau, &c.), attached to rocks bare at low water;" but his authority, when unconfirmed by the notes or remembrance of Mr. Nuttall, is not binding, as one shell which he assigns to the Sandwich Islands he calls *Perna Californica* (p. 245). It occurs among Dr. Gould's Mexican War Shells with the unsatisfactory reference "Californian coast, somewhere."

59. ISOGNOMON COSTELLATA, Conr.

Perna costellata, Conr. Journ. p. 246.

Hab. Sta. Barbara, sub saxis. Mus. Jay, Nuttall.

The habitats of Conrad's *Pernæ* are not satisfactorily ascertained. Of *P. incisa* Mr. Nuttall (whose specimen has 6, not 5 teeth) confirms Conrad's locality, viz. Sandwich Islands. Of the shell called *P. Californica*, Mr. Nuttall has no specimen, but believes Conrad is right in stating that it "inhabits with the preceding," *i. e.* in the Sandwich Islands. The third species, described above, is also assigned by Conrad to the Sandwich Islands, but Mr. Nuttall, who retains his specimen, distinctly refers it to the above locality.

60 *a.* PECTEN LATIAURATUS, Conr. Journ. p. 238. pl. 18. f. 9; Rve. Conch. Ic. pl. 1. sp. 5; Sow. Thes. Conch. vol. i. p. 57.

Hab. San Diego et Sta. Barbara; sub effluxum maris. Mus. Nutt., Cum.

60 *b.* PECTEN MONOTIMERIS, Conr. Journ. p. 238. pl. 18. f. 10.

Hab. Una cum præcedente. Mus. Jay.

Mr. Nuttall considers that this shell is probably a variety of *P. latiauratus*. The young are occasionally found attached to Fuci by a slender byssus.

61. Ostrea conchaphila, B.M. Cat. Maz. Moll. p. 161. no. 214.
Hab. Oregon, San Diego. Mus. Nuttall.

62. Bulla nebulosa, Gould.
Vide B.M. Maz. Cat. p. 173. no. 225.
Hab. Sta. Barbara. Mus. Nutt., Brit., Cuming.

63. Helix Californiensis, Lea, Trans. Am. Phil. Soc. vol. vi. pl. 23. f. 79, 84; Küst. Conch. Cab. pl. 57. f. 14, 15; Rve. Conch. Ic. pl. 115. f. 661; Pfr. 890.
+*H. Nickliniana*, Lea, teste Jay, Cat. no. 3452.
Hab. Columbia River. Mus. Jay.

64. Helix Columbiana, Lea, Trans. Am. Phil. Soc. vol. vi. pl. 23. f. 75; Rve. pl. 118. sp. 692; Pfr. 897.
Hab. California. Mus. Jay.

65. Helix fidelis, Gray, P. Z. S. 1834, p. 67; Rve. pl. 114. sp. 657; Pfr. 888.
=*H. Nuttalliana*, Lea, Trans. &c. pl. 23. f. 74.
Hab. Oregon. Mus. Jay.

66. Helix Oregonensis, Lea, Trans. &c. pl. 23. f. 85; Pfr. 1121.
Hab. Oregon. Mus. Jay.

67. Helix Vancouverensis, Lea, Trans. &c. pl. 23. f. 72; Rve. pl. 116. sp. 669; Pfr. 519.
Hab. Oregon. Mus. Nutt., Jay.

68. Helix Townsendiana, Lea, Trans. &c. pl. 23. f. 80.
Hab. Oregon. Mus. Gould.

69. Succinea Oregonensis, Lea, Trans. &c. 1841, p. 32; Pfr. 34.
Hab. Oregon. Mus. Jay.

70. Limnæa Nuttalliana, Lea, Trans. &c. 1841, p. 9.
Hab. Oregon. Mus. Jay.

71. Physa, *sp. ind.*
Allied to *Ph. elata*, Gould, B.M. Maz. Cat. p. 180. no. 237; P.Z.S. 1856, p. 203.
Hab. Oregon. Mus. Nuttall.

72. Planorbis subcrenatus, n. s.
P. t. tumida, tenuissima, cornea; anfr. vi. *rotundatis, suturis impressis; lirulis radiantibus acutis, subconfertis, interdum minutissime crenulatis; apertura rotundata, pariete parva,*

anfr. penult. parum attingente ; labro parum deflecto, intus fusco ; umbilico profundo.

Long. ·95, lat. ·8, alt. ·36.

Hab. Oregon ; legit *T. Nuttall* ; sp. unic. in Mus. suo.

"Differs from *P. trivolis*, Say, in the acuteness of the ribs, and in their being more distant."—*Cuming, MS.*

73. CHITON NUTTALLI, Cpr. P. Z. S. 1855, p. 231.

74. CHITON ACUTUS, Cpr. P. Z. S. 1855, p. 232.

75. CHITON ORNATUS, Nutt. P. Z. S. 1855, p. 232.

This may be the *Chiton armatus*, Nutt. of Jay's Cat. 2678 ; and if so = *Ch. muscosus*, Gould, Exp. Shells, p. 6. The descriptions do not however exactly correspond.

76. "ACMÆA PATINA, Esch. Zool. Atl. ed. Rathke, 1831, p. 19. pl. 24. f. 7, 8 ; Mid. Bull. Ac. St. Pet. vol. vi. no. 20 ; Sib. Reise, p. 187. pl. 16. f. 1 *a–d*, 2 *a–c*, 3.

+ *A. scutum*, Esch. loc. cit. p. 19. pl. 23. f. 1–3 ; teste Mid. loc. cit. et Phil. in Zeit. f. Mal. 1846, p. 107 ; ? D'Orb. Voy. Am. Mér. p. 479 (excl. fig.).

= *Patella mammillata*, Nutt. in Jay's Cat. no. 2839 ; Rve. Conch. Ic. pl. 42. f. 140, *a*, *b*.

+ *Patella tessellata*, Nutt. in Jay's Cat. no. 2885.

+ Jun. *Patella fenestrata*, Nutt. in Jay's Cat. no. 2815 ; Rve. Conch. Ic. pl. 38. f. 121, *a*, *b*.

+ *Patella verriculata*, Rve. Conch. Ic. pl. 31. f. 87, *a*, *b*.

+ *Patella cinis*, Rve. Conch. Ic. pl. 24. f. 60, *a*, *b*. *c*.

? + *Patella Nuttalliana*, Rve. Conch. Ic. pl. 30. f. 80, *a*, *b*.

? + *Patella Cumingii*, Rve. Conch. Ic. pl. 16. f. 37, *a*, *b* (Valparaiso, *Cuming*).

? + *Patella diaphana*, Nutt. non Rve. (*v. supra*, p. 203).

= *Lottia pintadina* (pars), Gould, loc. cit. in p. 203.

Hab. Sitcha (*Eschscholtz*, *Wosnessenski*) ; Kenai Bay (*do.*) ; Aleutian Islands, Unalashka (*Kastaljski*) ; Tugur Bay, Schantar Islands (*Middendorff*) ; California, passim (*Nuttall*) ; Monterey, San Diego (*Lieut. Green*) ; Mazatlan, 2 fresh sp. (*L'pool Coll.*) ; (?) Chili, Bolivia, Peru (*D'Orbigny*)."—B.M. Maz. Cat. no. 265. p. 207.

77. ACMÆA PELTA, Esch.

= *Patella leucophæa*, Nutt. MS. (non Gmel.) ; Jay's Cat. no. 2827 ; Rve. Conch. Ic. pl. 34. sp. 101.

+ *P. monticola*, Nutt. MS. = *P. monticolor*, Jay's Cat. no. 2844.

+ *P. strigillata*, Nutt. MS. ; Jay's Cat. no. 2881.

78. "ACMÆA PERSONA, Esch. Zool. Atl. p. 20. pl. 24. f. 1, 2 ; Mid. Mal. Ros. pt. ii. p. 36. pl. 1. f. 3.

+ Jun. = *A. radiata*, Esch. loc. cit. p. 20. no. 8 (teste Mid.).

+ *A. ancylus*, Esch. loc. cit. p. 20. no. 10. pl. 24. f. 4 *bis*, 6 (do.).

=*A. scutum*, D'Orb. loc. cit. pl. 64. f. 8–10, excl. diagn. (teste Mid.) non *A. scutum*, D'Orb. MS. in B.M. Coll.
?=*Lottia punctata*, Gray (non Quoy & Gaim.), teste Mid.
=*Patella Oregona*, Nutt. in Jay's Cat. no. 2852; Rve. Conch. Ic. pl. 36. f. 112, *a. b.*
+*P. umbonata*, Nutt. loc. cit. no. 2887; Rve. loc. cit. pl. 35. f. 107, *a*, *b*.
+*P. pileata*, Nutt. loc. cit. no. 2861.
Hab. Sitcha (*Eschscholtz*); Mouth of Columbia River (*Nuttall*); Sta. Barbara (*Col. Jewett*); San Diego (*Lieut. Green*); Mazatlan, 1 fresh sp. (*L'pool Coll.*)."—B.M. Maz. Cat. no. 266. p. 208.

79. "ACMÆA SCABRA, Nutt.

Lottia scabra, Jay's Cat. no. 2907.
Patella scabra, Rve. Conch. Ic. sp. 119. pl. 37. f. 119, *a*, *b*. Non *Patella* (*Lottia*) *scabra*, Gould, Exp. Shells, p. 10 = *Patella spectrum*, Nutt.
Hab. California (*Nuttall*); Monterey and Sta. Barbara (*Col. Jewett*); Mazatlan, 1 sp. only (*L'pool Coll.*); S.W. Mexico, 1 sp. (*P. P. C.*)"—B.M. Maz. Cat. no 267. p. 209.

80. ACMÆA SPECTRUM, Nutt. Jay's Cat. no. 2877; Rve. Conch. Ic. pl. 29. sp. 76. f. 76, *a*, *b*.
= *Patella* (*Lottia*) *scabra*, Gould, Exp. Shells, p. 10.
Hab. California. Mus. Nutt., Cum., Gould.

81. SCURRIA MITRA, Less. & Esch.

Patella scurra, Less. Voy. Coq. 1830, Zool. p. 421. no. 198.
Acmæa scurra, D'Orb. Voy. Am. Mér. p. 478.
Patella (*Acmæa*) *scurra*, Mid. Mal. Ross. ii. p. 34.
=*Acmæa mitra*, Esch. Zool. Atl. 1833, p. 18. pl. 23. f. 4.
+*A. mammillata*, Esch. p. 18.
+*A. marmorea*, Esch. p. 19.
= ? *Lottia pallida*, Gray, Zool. Beech. Voy. p. 147. pl. 39. f. 1.
=*Scurria scurra*, Gray, olim.
=*Scurria mitra*, Gray, Gen. 1856.
Hab. Valparaiso, abundans (*Cuming*); Monterey, haud rarè (*Nuttall*); Sitcha (*Eschscholtz* & *Wosnessenski*).

82. FISSURELLA ORNATA, Nutt. MS.

F. t. ovata seu elongata, plus minusve elevata; costis rotundatis, subtuberculosis, haud extantibus, haud æqualibus, confertis, interstitiis parvis, et striulis exillimis concentricis confertissimis ornata; epidermide tenui, subnitente, adhærente; apertura subcentrali, normaliter tripartita, plus minusve elongata; colore, extus griseo (t. juniore rosaceo), radiis plus minusve latis, xiii.–xvi., *fusco-purpureis seu roseis, eleganter picta; intus, superficie alba, porcellana, margine viridi-cinereo, ra-*

diorum finibus penicillato; callositate parum rugosa, t. juniore linea rosea circumeunte.

Var. MONSTROSA. *Variat t. subrotundata, conica, radiis penicillatis, apertura normali rotundata; apertura altera abnormali minima, extus alteri adjiciente, intus distante, callositate magna.*

Hab. California Superior; legit *T. Nuttall.* Mus. suo, B.M.

	long.	long. apert.	lat.	alt.
Sp. normale	1·6	·2	1·12	·42 poll.
Sp. elongatum ..	1·09	·2	·63	·23 ,,
Sp. monstrosum..	1·	·1	·78	·5 ,,

This extremely beautiful species varies almost as much as *F. rugosa,* Sow. A similar monstrosity occurring in *F. virescens,* Sow., is described in the B.M. Mazatlan Cat. p. 214. It is, by an oversight, assigned to St. Helena as a habitat, by Dr. Jay, Cat. no. 3003.

83. GLYPHIS * ASPERA, Esch.

Fissurella aspera, Esch. Zool. Atl. pt. v. p. 21. pl. 23. f. 5.
=*F. densiclathrata,* Rve., teste Cum. MS.
=*F. exarata,* Nutt. MS.
Hab. Sitcha (*Eschscholtz*); Sta. Barbara (*Nuttall*). Mus. Nutt., Cum.

84. LUCAPINA CRENULATA, Sow.

Fissurella crenulata, Sow. Conch. Ill. no. 19. f. 31, 38; Tank. Cat. App. p. vi.

Hab. San Diego. Mus. Nutt., Cum., Nat. Hist. Philadelphia.

Mr. Nuttall describes the animal of this beautiful shell to be nearly as large as a cheese. He presented his specimen to the Mus. Nat. Hist. Phil. in hopes that the authorities there would describe it; in which he has been thus far disappointed.

85. HALIOTIS CALIFORNIENSIS, Swains. Zool. Ill. vol. ii. pl. 80.

Hab. San Diego.

86. HALIOTIS CRACHERODII, Leach, Sow. Conch. Ill. pl. 7. f. 23.
=*H. glaber,* Schub. & Wagn. pl. 224. f. 3086–7.
Hab. Monterey. Mus. Jay, Nutt.

87. HALIOTIS SPLENDENS, Rve. Conch. Ic. pl. 3. f. 9.

Hab. San Diego.

The black animals of one of these species adhere with such tenacity to the rocks, that a clasp knife is broken in endeavouring to loosen them. The natives remove them with bayonets and eat them.

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* Subgenus GLYPHIS=*Lucapina,* H. & A. Ad. Gen. i. 447, maxima pars, non *Gray.*

Animal *margine pallii fimbriato, marginem testæ superante.* Testa *superficie cancellata, margine crenulato, callositate sæpe truncata, interdum laminata; testa juniori* Rimulæformi, *spira in apertura crescente absorpta.*

Vide B.M. Maz. Cat. p. 220. *Etym.* γλυφὶς, a notch or triglyph; from the sculptured surface.

88. **Pomaulax undosus**, Mawe.

Trochus undosus, Wood, Suppl. pl. 5. f. 1. p. 16.
Hab. Monterey. Mus. Nutt., Brit., Cuming.

89. **Trochiscus Norrisii**, Sow.

Hab. Monterey. Mus. Nutt., Brit., Cuming.
The young shell (teste *Nuttall*) has scarcely any umbilicus, and has a small tooth in the mouth.

90. **Trochus filosus**, Wood, Suppl. pl. 5. f. 23.

=*Trochus ligatus*, Gould, Exp. Sh. p. 55.
=*T. castaneus* (Nutt. MS.), Forbes, P. Z. S. 1850, p. 271.
Var.=*T. doliarius*, Gould, MS., non Chem.
? Var. = *Ziziphinus annulatus*, A. Ad. P. Z. S. 1851, p. 164 = *Trochus virgineus*, Gould, MS., non Mart. in Lam. An. s. Vert. vol. ix. p. 144. no. 51.
=*Trochus virgineus*, Chemn.

The Lamarckian species are said to come from New Zealand, and are probably allied forms. If that should prove incorrect, the name of Wood will give way. As it is, so indifferent a figure scarcely deserves precedence of the described species of Gould. Mr. Nuttall considers the two Californian forms conspecific.

91. **Omphalius ater**, Less.

=*T. gallina*, Forbes, P. Z. S. 1850, p. 271.
Hab. California. Mus. Nutt., Cum., Brit., &c.

92. **Omphalius fuscescens**, Phil.

=*Trochus luridus*, Nutt. MS.
Hab. Sta. Barbara. Mus. Nutt., Cum., Brit.

93. **Omphalius marginatus**, Nutt.

Hab. California. Mus. Nutt., Brit.

94. **Omphalius aureotinctus**, Forbes.

Trochus aureotinctus, Forbes, P. Z. S. 1850, p. 271.
? =*Trochus pallidus*, Nutt. MS.
=*T. cateniferus*, Poliez, teste Gould.
Hab. California. Mus. Nutt., Brit., Cum.

95. **Crepidula rugosa**, Nutt. MS.

Cr. t. "Cr. onici" *simili, sed epidermide nitente, tenui, adhærente; vertice nucleoso Velutinæ-formi; t. juniore intense atro-*

fusca; septo subdiaphano, margine magis declivi; intus et ad apicem atro-purpureo; margine acuto.

Long. 1·97, lat. 1·26, alt. ·54.

Hab. California Superior; legit *T. Nuttall.* Museis suo, Jay, Cuming.

This shell is regarded by Dr. Jay as identical with *Cr. onyx*, Sow. (=*Cr. hepatica*, C. B. Ad.? non Desh.), which it resembles in the character of the spire, and in the general appearance. The specimens examined differ in colour, which is not so lustrous; in habit of growth, which is not lamellar; in the septum, which is rather less opaque, particularly in the young shell; and especially in the epidermis, which is glossy, and only interrupted by the wrinkles of growth beneath. Whether these differences are of specific value, must await the examination of more numerous specimens. *Vide* B.M. Maz. Cat. no. 340. p. 278.

96. CREPIDULA ——, sp. ind.

Crepidula navicelloides, Nutt. MS. in Jay's Cat. no. 3035.

Comp. *Crepidula minuta*, Mid. Mal. Ross. pl. 11. f. 6, 7. p. 101 (Sitka).

Comp. *Crepidula nummaria*, Gould, Exp. Shells, p. 15.

Hab. California. Mus. Jay, Nutt.

From the very imperfect materials, it is impossible to determine this species with confidence. It has a great resemblance to *C. nivea*, var. *squama* (*v.* B.M. Maz. Cat. no. 341. p. 280), but the apex appears distinct both from that and *C. unguiformis*. Middendorff's young shell is probably conspecific; and the species may hereafter include the following.

97. CREPIDULA EXPLANATA, Gould, Mex. & Cal. Shells, p. 4. pl. 14. f. 7; P. Z. S. 1856, p. 205.

=*Crepidula exuviata*, Nutt. MS. in Jay's Cat. no. 3027.

=*Crepidula perforans*, Val. Voy. Ven.

Hab. California. Mus. Jay, Gould, Cuming.

This shell appears an aberrant form of the last species, caused by living in the hole of a *Lithophagus*. The young shell is normal; the nucleus is large, smooth, not imbedded as in *Cr. unguiformis*, nor standing out as in *Cr. nivea*. There is only one large spiral turn. The most peculiar character of the shell is the cancellation between the laminæ, but this only appears in some of the specimens. Distortions occur of the true *Cr. nivea*, almost equally aberrant in form. *Vide* B.M. Maz. Cat. p. 284.

98. CREPIDULA ACULEATA, var.

= *Crepidula Californica*, Nutt. MS. B.M. Maz. Cat. p. 268. no. 334.

Hab. Sta. Barbara, frequens. Mus. Nutt., Brit., Warrington, &c.

99. CRUCIBULUM SPINOSUM, Sow. B.M. Cat. Maz. Moll. no. 344. p. 290.

Hab. Monterey, rarissime. Mus. Nuttall.

100. HIPPONYX GRAYANUS, Mke. Proc. Zool. Soc. 1856, p. 4; B.M. Maz. Cat. no. 350. p. 299.

Hab. California, rarissime. Mus. Nuttall.

101. SPIROGLYPHUS ——, sp. ind.

Hab. Sta. Barbara, *Crepidulam aculeatam* erodente. Sp. jun. in Mus. Nuttall.

102. ALETES[*] SQUAMIGERUS, n. s.

A. t. majore, flavido-albida, solute spirali, plerumque glomerata; superficie costis spiralibus, squamis instructis; costulis pluribus intercalantibus, squamulis minoribus; squamis et squamulis imbricatis, arcuatis; interdum aperturam versus sculptura obsoleta.

Hab. Sta. Barbara. Sp. magn. glomer. in Mus. Nuttall; San Diego, Mus. Gould.

A fine group of this shell is in Mr. Nuttall's collection. It agrees in the main with the Mazatlan species, but differs in colour and sculpture. Mr. Nuttall believes that he found another species without scales.

103. PETALOCONCHUS MACROPHRAGMA, n. s., B.M. Maz. Cat. no. 359. p. 309; et *Monogr. Petaloconchorum* (Proc. Z. S. *postea*).

Hab. San Diego, *Euraphiæ Hembeli* adhærens. Mus. Nuttall.

Of the remarkable *Cirripedi* to which this shell is attached, only two specimens were found by Mr. Nuttall, and described by Conr. Journ. p. 261. pl. 20. f. 13.

104. CERITHIDEA SACRATA, Gould.

Cerithium (Potamis) sacratum, Gould, Exp. Shells, p. 60.

= *Pirena Californica*, Nutt. MS.

Hab. Monterey, Sta. Barbara, &c., aquis mixtis. Mus. Nutt., Brit.

105. LITORINA PLANAXIS, Phil.

= *Littorina tenebrata*, Gould.

Hab. California. Mus. Nutt., Brit.

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[*] The genus *Siphonium* is thus characterized and divided in the B.M. Maz. Cat. p. 301.

Genus SIFHONIUM, Bronne.

Testa valde irregularis, juniore haud turritelloidea. Operculum tenue, concavum, simplex.

A. Species typici. *Operculo valde concavo, vix spirali.*

Oceanis Indico et Atlantico repertæ.

B. Subgenus ALETES (ἀλήτης, errator). *Operculo parum concavo, multispirali, fere ut in* Turritella *formato.*

For further information on the opercula of *Vermetidæ*, v. B.M. Maz. Cat. pp. 300–312.

106. Natica ? Maroccana, var. Californica.

N. ?M. t. aurantio-fusca, labio intus suturam calloso; operculo extus solidiore, margine minus extante, ad nucleum magis calloso.

Long. ·88, long. spir. ·22, lat. ·72, div. 100°.

Hab. California Superior; legit *T. Nuttall,* Mus. suo; legit *Lady K. Douglas,* Mus. Brit.

The specific identity of shells belonging to this type from different faunas, is not yet decided. As compared with the W. Mexican shells (*N. Pritchardi,* Forbes, = *N. Chemnitzii,* Pfr.), the Californian specimens are rather more coarse-grained and solid, with the parietal callosity stronger under the suture. The operculum is thicker, with the margin less turned-up in proportion. Colour orange-brown, sometimes obscurely banded.

107. Ranella triquetra, teste Nutt. MS.

Hab. San Diego. Mus. Nuttall.

Exceedingly like a young *Vitularia salebrosa.*

108. Mitra maura, teste Nutt. MS.

Hab. California Superior. Mus. Nuttall.

109. Olivella glandinaria, Nutt.

Glandinaria Californica, Nutt. MS.

O. t. bulbiformi, in medio inflata, utrinque regulariter constricta; spira satis elevata, acuta; haud polita, purpureo-fusca, in spira aurantia, circa basin violaceo tincta; apertura antice dilatata; columella ad basin biplicata; labio calloso, lævi; callositate basali haud lata.

Long. ·88, long. spir. ·29, lat. ·47, div. 70°.

Hab. In California Superiore; legit *T. Nuttall.* Sp. unic. in Mus. suo.

The genus *Glandinaria* appears to have been proposed (not published) by Mr. Nuttall, in ignorance of the establishment of *Olivella* by D'Orbigny, with which it exactly coincides. The name is retained for the very well marked species, in preference to the ill-used *Californica.*

110. Buccinum Poulsoni, Nutt. MS.

Hab. Upper California. Mus. Nuttall.

111. Purpura aperta, Blainv. var.

Purpura aperta, Kien. Icon. Conch. p. 81. no. 51. pl. 20. f. 59, et var. pl. 22. f. 64; Rve. Conch. Ic. pl. 3. sp. 15; Jay's Cat. no. 8942.

Purpura macrostoma, Conr. Journ. p. 267.

Hab. Sta. Barbara. Mus. Jay.

Conrad says this species may be readily distinguished from *P. aperta,* but does not say how. Dr. Jay considers the two identical;

and as he seems to have the type, his opinion is followed. Mr. Reeve's reference to the Nouv. Ann. Mus. cannot be verified. It appears to have been published by Kiener from a manuscript name.

112. PURPURA HARPA, Conr. Journ. p. 266. pl. 20. f. 25.
Hab. Sta. Barbara. Mus. Nuttall.

113. PURPURA EMARGINATA, Desh.
= *P. Conradi*, Nutt. MS.; teste Jay, Cat. 8972. Mus. suo.
Hab. California.

114. MONOCEROS ENGONATUM, Conr.

P. (*Monoceros*) *engonata*, Conr. Journ. p. 264. pl. 20. f. 17: diagn. auct.

> "*M. t. fusiformi; anfractibus superne angulo saliente carinatis, spiraliter sulcatis, striis incrementi vix decussatis; anfr. tertio longitudinaliter costellato; pallida, maculis fuscis, intensioribus, angulatis, ornata; intus alba, maculis paucis purpureis;" apertura valde elongata; canali haud parva; labro intus dentibus plurimis;* "*acanthina tenui, gracillima.*"

Hab. Sta. Barbara. Mus. Nuttall, Brit., Jay, 9067.

= *Monoceros unicarinatum*, Reeve, Conch. Ic. sp. 1: diagn. sol., syn. plerumque excl., pl. 1. f. 1, excl.: non *M. unicarinatum*, Sow., nec Desh.

Comp. *Purpura spirata*, Blainv. Nouv. Ann. Mus. vol. i. 1832, pl. 12. f. 8. p. 252. no. 105; Kien. Icon. Conch. p. 121. no. 76. pl. 38. f. 90.

= *Monoceros unicarinatum*, pars, Desh. in Lam. An. s. Vert. vol. x. p. 124. no. 10, syn. Angl. excl.

The shell figured by Conrad and found in Mr. Nuttall's collection is very triangular, with a pointed base. The *P. spirata* of Blainville (described and figured with his usual accuracy, for which credit has not been given to him by some authors, who, wanting it in their own works, have added great labour to students) is a Sandwich Island shell, brought by M. Botta, very obtusely angulated, with a swollen base, scarcely acanthoid, and a canal long enough for *Chorus*, Gray. It is remarkable for the scaly keel of the upper whorls. This shell is reproduced by Kiener in a different form, who affiliates Sowerby's species (apparently constituted from a Nuttallian specimen received through Dr. Jay by Mr. Cuming) to that in the Paris Museum. Deshayes, copying this error, and not even adopting Blainville's earlier specific name, gives the name and reference of Sowerby, with a description in the main belonging to the Blainvillian species, although perhaps with some additions from Sowerby's figure. Mr. Reeve completes the confusion by describing a shell, "anfr. *superne* angulatis," very probably the true *P. engonata* of Conrad which he quotes; at the same time quoting the two different shells above named (one of them under two names, *P. spicata* and *P. spirata*), and figuring a very different shell, not angulated at all. To mere learners, like the author of the present paper, such differences are exceedingly perplexing.

115. Monoceros brevidens, Conr.

P. (*Monoceros*) *brevidens*, Conr. Journ. p. 264: diagn. auct.

> "*M. t. fusiformi, solida, spira curtiore; anfr. superne angulo haud saliente munitis," tumidioribus basin versus; "acantha curtiore, solidiore; spiraliter sulcatis," sulcis interdum obsoletis.*

Monoceros unicarinatum, Sow. Conch. Ill. no. 14. p. 4. f. 5; non Reeve, Conch. Ic. sp. 1, nec Desh. in Lam. An. s. Vert. no. 10, diagn. = *Monoceros*, pl. 1. f. 2 (non sp. 2); Reeve, loc. cit.

Non *Monoceros brevidentatum*, Gray in Wood, Suppl. (1828) p. 12. no. 10, p. 43. pl. 4. no. 10; Sow. Conch. Ill. f. 4; Reeve, Conch. Ic. pl. 1. sp. 4. f. 4 *a*, *b*; Desh. in Lam. An. s. Vert. vol. x. p. 123. no. 9=*Purpura cornigera*, Blainv. Nouv. Ann. Mus. vol. i. p. 213. no. 28. pl. 9. f. 10; Kien. Icon. Conch. p. 123. no. 78. pl. 39. f. 92=*Monoceros maculatum*, Gray ipse in Zool. Beech. Voy. p. 125.

Hab. Sta. Barbara. Mus. Nutt., Cum., Jay.

The exact date of Sowerby's species, which is generally referred to the *P. engonata* of Conrad, but differs from the figure of that shell, and agrees much better with the description of this, is difficult to determine. The volume bears date 1841. It differs from *P. engonata* in being swollen at the base, with less sculpture and angulation.

116. Monoceros lapilloides, Nutt.

P. (*Monoceros*) *lapilloides*, Conr. Journ. p. 265. pl. 20. f. 18 (1837).

> "*M. t. fusiformi, curta, solida; anfr. superne vix concavis; sulcis spiralibus obsoletis; pallida, maculis fuscis quadratis seriebus spiralibus ornata; apertura et columella purpureis; labro marginem versus albida.*"

= *Monoceros punctulatum*, Sow. Conch. Ill. p. 4. no. 13. f. 3.

=*Monoceros punctatum*, Gray in Zool. Beech. Voy. (1839), p. 124; Reeve, Conch. Ic. sp. 2. pl. 1. f. 1 (non f. 2).

Hab. Sta. Barbara (*Nuttall*). Is. Cocos, in rupibus (*Capt. Colnett*). Mus. Brit., Nutt., Cuming, &c.

The differences between the specimens of Californian *Monoceros* are so numerous, and similar species from other quarters are so variable, that the three species here repeated from Conrad are given with very great hesitation. That the forms figured by Sowerby and Reeve are conspecific, is by no means improbable; the form *engonata* is the most aberrant, but it is by no means unapproached.

Murex, Subgenus Cerostoma, Conr.

Murex; labro ut in Monoceros (Acanthina) *dentato, dente erecto.*

117. Cerostoma Nuttalli, Conr. Journ. p. 264. pl. 20. f. 22; Jay's Cat. no. 8298.

Hab. Sta. Barbara. Mus. Nuttall, Jay.

5. SYNOPSIS AVIUM TANAGRINARUM.—A DESCRIPTIVE CATALOGUE OF THE KNOWN SPECIES OF TANAGERS.

By PHILIP LUTLEY SCLATER, M.A., F.Z.S. ETC.

Part III.—Containing the genera *Spindalis*, *Tanagra*, *Dubusia*, *Compsocoma*, *Buthraupis*, *Stephanophorus*, *Pœcilothraupis*, *Iridornis*, *Calliste*, *Diva*, *Pipridea*, *Chlorochrysa*, *Tanagrella*, *Glossiptila*, *Chlorophonia*, and *Euphonia*.

Genus XXV. SPINDALIS.

Spindalis, Jard. & Selby, Ill. Orn. n. s. (1836).

Rostrum Tanagræ, *sed basi latiore et culmine incurviore : alæ modicæ ; remigibus tertia et quarta longissimis, secunda quintam æquante, prima sextam paulo superante : cauda modica, quadrata : sexus dissimiles.*

1. SPINDALIS NIGRICEPHALA.

Serinus jamaicensis, Briss. Orn. iii. 189 (*undè*),
Fringilla cana, Gm. S. N. 290 (?).
Tanagra nigricephala, Jameson, Ed. N. Phil. Journ. xix. 213 ; Gosse, Ill. B. Jam. pl. 56.
Spindalis bilineatus, Jard. & Selby, Ill. Orn. n. s. pl. 9.
Tanagra zena, Gosse, B. Jam. p. 231.
Tanagra zenoides, Des Murs, Icon. Orn. pl. 40.
Spindalis nigricephala, Bp. Consp. p. 240.

Olivacea : uropygio flavicante : capite toto cum gutture nigris, superciliis latis et stria rictali cum gula summa albis : abdomine aurescente, pectore aurantiaco, ventre imo et crisso albis : alis nigris albo marginatis : cauda nigra, rectrice una utrinque extima albo extus limbata et intus terminata : tectricibus subalaribus albis. ♀. *Olivacea, capite cinerascentiore, uropygio flavescentiore : subtus cinerea, abdomine medio aurescente : ventre imo crissoque albidis : alis caudaque nigris, illis albo limbatis.*

Long. tota 7·5, alæ 4·2, caudæ 3·2.
Hab. Jamaica (*Gosse*).
Mus. Brit., &c.

2. SPINDALIS MULTICOLOR.

Tanagra multicolor, Vieill. Enc. Méth. p. 776 ; Gal. Ois. i. p. 100. pl. 76.
Spindalis multicolor, Bp. Consp. p. 240.

Capite nigro : stria utrinque superciliari et maxillari albis : cervice postica aurantia, interscapulio olivaceo, dorso imo aurescenti-castaneo : alis nigris albo limbatis : tectricibus alarum minoribus castaneis : subtus, mento albo ; gula media flava, macula utrinque magna nigra ; pectore summo castaneo, inferiore cum ventre aureis ; ventre imo cum crisso albis ; rectri-

cibus nigris, duabus utrinque extimis albo variis; rostro et pedibus nigris. ♀. *Supra olivascens, uropygio flavescentiore: subtus albescens olivaceo indutus, ventre medio albo: alis nigris, albo limbatis.*

Long. tota 6·2, alæ 3·2, caudæ 2·8.

Hab. S. Domingo (*Vieillot*) (*Sallé*).

Mus. Brit.

This is a smaller bird than the *S. nigricephala*, and has the lesser wing-coverts chestnut and not black. From the true *zena* it may be distinguished by its smaller bill, the more extended and brighter yellow colour on the belly, and by its having the whole back of the neck bright yellow, not dark chestnut.

3. SPINDALIS ZENA.

Fringilla bahamensis, Briss. Orn. iii. 168; Catesby, Car. i. pl. 42.

Fringilla zena, Linn. S. N. i. 320.

Tanagra zena, d'Orb. in Sagra Hist. Cub. p. 74. pl. 11; Gray, Gen. p. 365. sp. 13 (*partim*).

Tanagra pretrei, Less. R. Z. 1839, p. 102; Cent. Zool. p. 122. pl. 45; Gray, Gen. p. 365. sp. 14.

Spindalis zena et *pretrei*, Bp. Consp. p. 248.

Spindalis pretrei, Cab. Journ. f. Orn. 1855, p. 476.

Supra nigra: cervice postica et dorso imo brunnescenti-castaneis: stria superciliari et maxillari utrinque albis: alis nigris albo limbatis: mento summo albescente: gula media flava, laterali utrinque nigra: pectore summo castaneo, inferiore aureo: ventre cinerascente, crisso albo: rectricibus nigris: harum utrinque extimis albo variegatis.

Long. tota 5·8, alæ 2·9, caudæ 2·6.

Hab. Cuba (*Ramon de la Sagra*); Bahamas (*Catesby*).

Mus. Brit.

Genus XXVI. TANAGRA.

Tanagra, Linn. S. N. i. p. 316 (1766).

Thraupis, Boié, Isis, 1826, p. 974.

Rostrum subincurvum, tam altum quam latum, modice elongatum et dente finali instructum; culmine incurvo; gonyde paulo ascendente: alæ modicæ; remigibus secunda tertia et quarta longissimis, prima paulo breviore: cauda modica, quadrata: ptilosis cærulea: sexus plerumque similes, sed aves juniores diversæ.

1. TANAGRA EPISCOPUS.

Episcopus avis, Briss. Orn. iii. p. 40.

Tanagra episcopus, Linn. S. N. i. p. 316; Strickl. Ann. N. H. xx. p. 332; Bp. R. Z. 1851, p. 170; Note s. l. Tang. p. 21; Sclater, P. Z. S. 1855, p. 157.

Gracula glauca, Sparm. Mus. Carls. pl. 54.

Tanagra glauca, Gray, Gen. p. 364. sp. 5.

Tanagra serioptera, Sw. An. in Men. p. 313; Schomb. Guian. iii. 670; Cab. Mus. Hein. p. 28.

> *Cærulescenti-cana; dorso obscuriore; uropygio cyaneo lavato: alis caudaque nigris cæruleo limbatis: tectricibus alarum minoribus albis, nitore cyaneo; majoribus autem eodem colore vix marginatis.*

Long. tota 6·0, alæ 3·5, caudæ 2·4.

Hab. British Guiana (*Schomb.*); Cayenne; New Grenada, Bogota.

Mus. Brit., &c.

The *T. episcopus* of Linnæus depends upon Brisson's '*Episcopus avis*,' and from Brisson's description and locality I think there can be little doubt that the present species with white shoulders and narrow edgings to the greater coverts was intended.

The only bird likely to be confounded with it is the next following species *T. cœlestis*, which has a regular *white bar* across the wings formed by the pure white terminations of the greater coverts.

2. TANAGRA CŒLESTIS.

Tanagra cœlestis, Spix, Av. Bras. ii. p. 42. pl. 55. fig. 2; Bp. P. Z. S. 1837, p. 121; R. Z. 1851, p. 169; Note s. l. Tang. p. 20; Sclater, P. Z. S. 1854, p. 115.

Tanagra sayaca, Tsch. Wiegm. Arch. 1844, p. 286; F. P. p. 203.

Thraupis episcopus, Cab. Mus. Hein. p. 28 (note).

> *Cærulescenti-cana, subtus dilutior: alis caudaque nigris cæruleo limbatis: tectricibus alarum minoribus candidis, majoribus quoque albo late terminatis.*

Long. tota 6·5, alæ 3·8, caudæ 2·7.

Hab. Upper Amazon, Fonteboa (*Spix*); Pintobamba (*Cast.* et *Dev.*); prov. Quixos, Ecuador.

Mus. Parisiensi.

3. TANAGRA CANA.

Tanagra cana, Sw. Orn. Dr. pl. 37 ♂ (adult); Strickl. Ann. N. H. xx. p. 332; Sclater, P. Z. S. 1855, p. 157.

Tanagra cœlestis, Sw. Orn. Dr. pl. 41 (juv.)?

Tanagra Swainsoni, Gray, Gen. p. 36[illegible]. sp. 7.

Thraupis cana, Cab. Mus. Hein. p. [illegible]9.

Tanagra episcopus, Schomb. Guian. iii. p. 670?

Tanagra sayaca, Bp. R. Z. 1851, p. 170; Note s. l. Tang. p. 21.

> *Cærulescenti-cana; dorso obscuriore: uropygio cyanescente: alis caudaque nigris cæruleo limbatis: tectricibus alarum minoribus violaceo-cyaneis: majorum autem marginibus angustis intense cæruleis.*

Long. tota 6·4, alæ 3·6, caudæ 2·4.

Hab. Venezuela; Trinidad; Tobago (*Kirk.*); New Grenada, Bogota; British Guiana (*Schomb.*).

Mus. Brit., &c.

These blue '*Bishop*' Tanagers are very puzzling, and I confess I am as yet quite unable to arrange them satisfactorily. After separating the true '*episcopus*' and '*cœlestis*' (which are clearly distinct) and the large South Brazilian '*cyanoptera*' (which may also be recognized without much difficulty), there remain four or five birds with different names attached to them varying a good deal in the amount of blue on the wings, but not otherwise presenting very appreciable differences. At present I am inclined to refer them to two species—a South American bird with the lesser wing-coverts of a more or less violet tint—and a Central American and Mexican species with these parts deep blue—like the South Brazilian *T. cyanoptera*. The former bird is common in collections from Bogota and Trinidad, and seems to range so far south as the Amazon at Para. The latter extends from the north coast of New Grenada through Central America as far north as the province of Vera Cruz, whence specimens have lately been brought by M. Sallé.

4. TANAGRA DIACONUS.

Tanagra (*Aglaia*) *diaconus*, Less. R. Z. 1842, p. 175.
Calliste diaconus, Gray, Gen. p. 466. sp. 29.
Tanagra episcopus, Bp. P. Z. S. 1837, p. 116.
Tanagra diaconus, Sclater, P. Z. S. 1856, p. 142.
Tanagra cyanilia, Bp. Notes Orn. p. 62?
Thraupis glaucocolpa, Cab. Mus. Hein. p. 28?

Cærulescenti-cana: dorso toto obscuriore: uropygio vix cærulescente: alis caudaque nigris cæruleo limbatis: tectricibus alarum minoribus lætissime cæruleis.

Long. tota 6·2, alæ 3·5, caudæ 2·5.

Hab. South Mexico, Cordova (*Sallé*); Guatimala (*Bp.*) (*Constancia*); Nicaragua, Realejo (*Less.*); Chiriqui (*Bridges*); New Grenada, S. Martha (*Verreaux*).

5. TANAGRA CYANOPTERA.

Tanagra brasiliensis varia, Briss. Orn. iii. p. 18 (?).

Tanagra sayaca, Linn. S. N. i. p. 316 (?); Max. Beitr. iii. 484 (*certè*).

Loxia virens, Linn. S. N. i. p. 303 (?).

Tanagra virens, Strickl. Ann. N. H. xx. 332 (*certè*).

Lindo saihobi, Azar. Pax. i. p. 370.

Saltator cyanoptera, Vieill. N. D. d'H. N. xiv. p. 104; Enc. Méth. p.

Tanagra episcopus, Hartl. Ind. Az. p. 6; d'Orb. Voy. p. 274; Sw. Orn. Dr. pl. 39 (adult).

Tanagra inornata, Sw. Orn. Dr. pl. 40 (juv.); Gray, Gen. p. 364. sp. 8; Bp. Consp. p. 238.

Tanagra argentata, Gray, Gen. p. 364. sp. 6.

Tanagra prælatus, Less. Tr. d'Orn. p. 463.

Tanagra cyanoptera, Bp. R. Z. 1851, p. 170; Note s. l. Tang. p. 21.

Thraupis cyanoptera, Cab. Mus. Hein. p. 29.
Thraupis sayaca, Cab. Mus. Hein. p. 28.

Major : supra virescenti-cana : subtus grisescentior : alis nigris virescenti-cæruleo limbatis : tectricibus minoribus intense cæruleis.

Long. tota 6·5, alæ 3·8, caudæ 2·8.

Hab. South-east Brazil (*Max.*); Rio Grande do Sul (*Plant*); Paraguay (*Az.*); Corrientes and Buenos Ayres (*d'Orb.*); Bolivia, Cochabamba, Valle Grande and Yungas (*d'Orb.*).

Mus. Brit., &c.

6. TANAGRA ORNATA.

Tanagra ornata, Sparm. Mus. Carls. pl. 95; Sw. Orn. Dr. pl. 42; Gray, Gen. p. 364. sp. 2; Bp. Consp. p. 238; R. Z. 1851, p. 470; Note s. l. Tang. p. 21 (*partim*).

Tanagra archiepiscopus, Desm. Tan. pl. 17; Spix, Av. Bras. ii. p. 42. pl. 55. fig. 1; Max. Beitr. iii. 481; Schomb. Reise, iii. 670.

Thraupis ornata, Cab. Mus. Hein. p. 28.

Archbishop Tanager, Lath. G. H. vi. 16.

Olivaceo-viridis : interscapulio obscuriore : pileo cæruleo : subtus fuscus cæruleo lavatus : alis caudaque nigris olivaceo limbatis : campteriis cæruleis : tectricibus alarum minoribus flavis.

Long. tota 6·5, alæ 3·8, caudæ 2·8.

Hab. South-east Brazil (*Max.*); British Guiana (*Schomb.*).

Mus. Brit., &c.

7. TANAGRA PALMARUM.

Tanagra palmarum, Max. Reise, ii. p. 76 (1821); Beitr. iii. 489.

Tanagra olivascens, Licht. Doubl. p. 32; d'Orb. Voy. p. 274; Sw. Orn. Dr. pl. 38; Schomb. Reise, iii. 670.

Thraupis olivascens, Cab. Mus. Hein. p. 28.

Tangara Evêque, femelle, Desm. Tan. pl. 16!

Tanagra ornata ♀, Bp. R. Z. 1851, p. 170, et Note s. l. Tang. p. 21!!

Tang. de Cayenne, femelle, Buff. Pl. Enl. 178. fig. 2?

Intense oleagineus : interscapulio obscuriore : tectricibus alaribus capite fere concoloribus sed paulo clarioribus : remigibus et rectricibus cum alula spuria fusco-nigris olivaceo-viridi marginatis : remigum basi albescenti-olivacea, vittam indistinctam transalarem formante.

Long. tota 7·0, alæ 3·7, caudæ 2·7.

Hab. Brazil, Para (*Wallace*); Rio Bahia, &c.; Bolivia (*d'Orb.*); British Guiana (*Schomb.*); Cayenne; Trinidad.

Mus. Brit., &c.

Prince Bonaparte, in his 'Note s. l. Tangaras,' has followed the example of some of the older authors in considering this bird as the female of *T. ornata*; but I have not the slightest doubt that it is quite a distinct species. See d'Orbigny's Voyage, p. 274, and P. Max. of Neu Wied's Beitrage, iii. 489.

8. TANAGRA MELANOPTERA.

Tanagra olivascens, Tsch. F. P. p. 204?

Tanagra palmarum, Sclater, P. Z. S. 1855, p. 177?

Tanagra melanoptera, Hartl. R. Z.

Similis T. palmarum, *sed paulo minor et coloribus lætioribus, dorso et ventre purpurascentioribus: alæ dimidio apicali nigro, plumis non viridi limbatis.*

Long. tota 6·7, alæ 3·7, caudæ 3·3.

Hab. East Peru (*Hartlaub*); New Grenada, Bogota.

Mus. Bremensi.

This is perhaps a local variety only of the common *T. palmarum,* presenting no green edgings to the primaries or secondaries beyond the green bar. I have birds from S. Martha, Trinidad and Bolivia, which seem intermediate between this and the former species.

9. TANAGRA ABBAS.

Tanagra abbas, Licht. Preis-Verz. no. 70 (1831).

Tanagra vicarius, Less. Cent. Zool. pl. 68; Gray, Gen. p. 364. sp. 4; Bp. Consp. p. 238; P. Z. S. 1837, p. 116; R. Z. 1851, p. 171; Note s. l. Tang. p. 22.

Thraupis vicarius, Cab. Mus. Hein. p. 29.

♂. *Pallide olivascens: capite cæruleo, gutture cærulescente: interscapulii pennis medialiter nigricantibus: alis caudaque nigris: speculo in basi primariorum et secundariorum flavissimo: tectricibus alarum majoribus olivaceis, minoribus cærulescentibus: rostro et pedibus nigris.*

♀. *Mari similis, sed coloribus paulo dilutioribus: gutture vix cærulescente.*

Long. tota 7·0, alæ 4·0, caudæ 2·9.

Hab. S. Mexico, Cordova (*Sallé*); Orizaba (*Botteri*); Honduras (*Dyson*); Guatimala (*Constancia*).

Mus. Brit., Derbiano, &c.

10. TANAGRA STRIATA.

L'Onglet, Buff. H. N. iv. p. 256.

Tanagra striata, Gm. S. N. i. p. 899; d'Orb. Voy. p. 275; Bp. Consp. p. 239; Hartl. Ind. Az. p. 6.

Le Noir-souci, Buff. H. N. iv. 150?

Loxia bonariensis, Gm. S. N. p. 850?

Lindo celeste oro y negro, Azar. Pax. i. p. 375.

Tanagra chrysogaster, Cuv. Règ. An. i. p. 366; Puch. Arch. Mus. Paris, vii. 344.

Aglaia striata, Lafr. et d'Orb. Syn. Av. in Mag. de Zool. 1837, p. 32; G. R. Gray, Darwin's Voy. Beagle, p. 97.

Tanagra darwini, Bp. P. Z. S. 1837, p. 121 (♀); Darwin's Voy. pl. 34 (♂).

Tanagra frugilegus, Tsch. Av. Consp. in Wiegm. Arch. 1844, p. 286; F. P. p. 204. pl. 17. fig. 1; Hartl. R. Z. 1849, p. 286 (♀).

Calliste frugilegus, Bp. Consp. p. 236. sp. 41.

Chrysothraupis frugilegus, Bp. R. Z. 1851, p. 143; Note s. l. Tang. p. 22.

♂. *Niger, dorso postico et abdomine aurantiacis, ventre imo in flavum transeunte: capite et gutture undique cum marginibus alarum et caudæ cæruleis: rostri ambitu nigro.*

♀. *Mari similis, sed dorso et scapularibus olivaceis, abdomine toto aurescenti-flavo.*

Avis junior. *Fusco-olivascens subtus grisescenti-albidus: capite cærulescente, uropygio flavido tincto.*

Long. tota 6·8, alæ 3·7, caudæ 2·8.

Hab. Southern Brazil, Rio Grande do Sul (*Plant*); Uruguay, Maldonado (*Darwin*); Montevideo, Buenos Ayres, Corrientes, Peru and Bolivia (*d'Orb.*); Paraguay (*Azara*); Western Peru, Lima (*Tsch.*); Western Ecuador, fruit gardens of Lima (*Tsch.*).

Mus. Brit., &c.

I believe now that there is little doubt that the olive-backed bird named *T. darwini* by Prince Bonaparte, and afterwards *T. frugilegus* by Tschudi, is really the female of *T. striata*, though at one time I thought otherwise. I have not yet seen the black-backed male from the western side of the Andes; but d'Orbigny's Bolivian collection in the Paris Museum contains examples of both sexes from the eastern side.

If the birds from all the localities given are identical, which I believe to be the case, this *Tanager* presents an instance of a remarkably extensive geographic range for a bird of this family.

11. TANAGRA CYANOCEPHALA.

Aglaia cyanocephala, Lafr. et d'Orb. Syn. Av. in Mag. de Zool. 1837, p. 32.

Tanagra maximiliani, d'Orb. Voy. p. 276. pl. 23. fig. 2.

Tanagra cyanocephala, Gray, Gen. p. 364. sp. 11; Bp. Consp. p. 238; Tsch. Wiegm. Arch. 1844, p. 286; F. P. p. 205 (?).

Thraupis cyanocephala, Cab. Mus. Hein. p. 29?

Supra flavo-olivacea: pileo cæruleo: nucha viridescente: capitis lateribus nigris: subtus cinerea: ventre imo crissoque flavis viridi tinctis: tectricibus subalaribus pure flavis.

Long. tota 7·8, alæ 3·5, caudæ 3·1.

Hab. Bolivia, Sicasica (*d'Orb.*); Western Peru, Lima (*Tsch.*).

Mus. Brit., Paris.

12. TANAGRA AURICRISSA.

Dubusia cyanocephala?, Sclater, P. Z. S. 1855, p. 157.

Dubusia auricrissa, Sclater, P. Z. S. 1855, p. 227.

Supra flavescenti-olivacea: capite toto et nucha cæruleis: loris nigris: subtus cærulescenti-cinerea: tectricibus subalaribus et ventre imo crissoque cum tibiis flavissimis.

Long. tota 6·5, alæ 3·6, caudæ 3·0.

Hab. New Grenada, Bogota.

Mus. Brit., Paris.

13. TANAGRA OLIVICYANEA.

Tanagra olivicyanea, Lafr. R. Z. 1843, p. 69; Bp. Consp. p. 238.
Tachyphonus olivicyaneus, Gray, Gen. p. 365. sp. 15.
Dubusia olivicyanea, Sclater, P. Z. S. 1855, p. 157.

Supra flavescenti-olivacea : capite undique et corpore subtus cæruleis : ventre imo crissoque olivascenti-flavis : tibiis et tectricibus subalaribus flavissimis : loris nigris.

Long. tota 7·3, alæ 2·5, caudæ 2·8.
Hab. Venezuela, Galipan alt. 8000 ft. (*Dyson*); New Grenada.
Mus. Brit.

Genus XXVII. DUBUSIA.

Dubusia, Bp. Compt. Rend. Ac. Sc. Par. xxxi. p. 424 (Sept. 1850).

Rostrum elongatum, incurvum, compressiusculum, dente finali distincto; gonyde recta: alæ modicæ, rotundatæ, remigibus quarta et quinta longissimis: cauda longissima et rotundata: ptilosis nigra, cærulea, et flava: sexus similes.

1. DUBUSIA TÆNIATA.

Tachyphonus tæniatus, Boiss. R. Z. 1840, p. 67; Bp. Consp. p. 237.

Arremon tæniatus, Gray, Gen. App. p. 16.

Dubusia tæniata, Sclater, Tan. Cat. Sp. p. 10; P. Z. S. 1855, p. 157.

Supra ex nigro-cærulescens : alis caudaque nigris, cærulescente limbatis : capite toto cum collo undique et gutture nigris, superciliis in collum utrinque elongatis et tectricibus alarum minoribus argenteo-cyaneis : abdomine flavo; pectore summo et crisso pallide ochraceis : tibiis nigricantibus : rostro et pedibus nigris.

Long. tota 7·3, alæ 3·7, caudæ 3·7.
Hab. New Grenada, Bogota.
Mus. Brit., Paris., &c.

2. DUBUSIA SELYSIA.

Tanagra selysia, Bp. Consp. p. 239.
Dubusia selysia, Bp. Compt. Rend. xxxii. p. 81.

Supra ex cinereo cærulescenti-viridescens : capite toto cum gutture nigris : fronte et superciliis latis et elongatis, collum posticum cingentibus, cum tectricibus alarum minoribus argenteo-cyaneis : remigum et rectricum marginibus cærulescentibus : abdomine flavo, pectore summo brunnescentiore, crisso ochracescentiore : rostro et pedibus nigris.

Long. tota 7·7, alæ 3·5, caudæ 3·4.
Hab. Vicinity of Quito, forests of the Andes (*Jameson*).
Mus. Lugdunensi, Joh. Gould et Gul. Jardine, Bart.

Genus XXVIII. COMPSOCOMA.

Compsocoma, Cab. Mus. Hein. p. 140 (1850).

Rostrum rectum, elongatum, subconicum, dente finali indistincto: alæ elongatæ, remigibus secunda, tertia et quarta fere æqualibus et longissimis: cauda longa, subrotundata; pedes validi: sexus similes: ptilosis nigra, cærulea et flava.

1. COMPSOCOMA VICTORINI.

Tachyphonus victorini, Lafr. R. Z. 1842, p. 336; Gray's Gen. p. 365.
Tanagra victorini, Bp. Consp. p. 239.
Compsocoma victorini, Cab. Mus. Hein. p. 140.
Tachyphonus elegans, Less. Echo d. M. S. 1844; Descr. d. Mamm. et Ois. p. 349.
Tanagra flavivertex, Lafr. MS.

Olivascenti-viridis: tectricibus alarum minoribus cæruleis: primariis et rectricibus thalassino marginatis: capite nigro, tænia lata verticali cum corpore subtus flavis.

Long. tota 7·0, alæ 3·8, caudæ 2·8.
Hab. New Grenada, Bogota.
Mus. Brit. et Paris.

2. COMPSOCOMA SUMPTUOSA.

Tachyphonus sumptuosus, Less. Tr. d'Orn. p. 463; Puch. Arch. Mus. Par. vii. p. 379. pl. 23.
Tanagra somptuosa, Bp. Consp. p. 239.
Tachyphonus flavinucha, Tsch. F. P. p. 208.
Compsocoma elegans, Cab. Mus. Hein. p. 140.
Tanagra chrysocome, Licht. in Mus. Berol.

Atra; dorso imo olivascente: humeris cæruleis: primariis et rectricibus thalassino marginatis: macula nuchali lata et corpore subtus flavis.

Long. tota 6·5, alæ 3·5, caudæ 2·8.
Hab. Ecuador, vicinity of Quito (*Jameson*); Peru (*Tschudi et Philippi in Mus. Berol.*); Venezuela (*Levraud*).
Mus. Brit., Paris., Berolinensi.

This bird has been confounded both with the preceding and with the next following species, but may be easily distinguished by its black back and olivascent uropygium.

3. COMPSOCOMA FLAVINUCHA.

Tachyphonus flavinucha, Lafr. et d'Orb. Mag. de Zool. 1837, p. 29; d'Orb. Voy. p. 280. pl. 21; Gray's Gen. p. 365.
Tanagra flavinucha, Bp. Consp. p. 239.
Compsocoma flavinucha, Cab. Mus. Hein. p. 140.

Niger: humeris et dorso postico cum rectricum marginibus an-

gustis cæruleis: primariis externe thalassino marginatis: vitta nuchali media et corpore toto subtus flavis.

Long. tota 6·7, alæ 3·6, caudæ 2·8.

Hab. Bolivia, prov. Yungas (*d'Orb.*).

Mus. Parisiensi et Derbiano.

The blue on the rump at once distinguishes this Bolivian bird from its three congeners.

4. COMPSOCOMA NOTABILIS.

Tanagra notabilis, Jard. Edinb. N. Phil. Journ. n. s. ii. p. 119; Sclater, P. Z. S. 1855, p. 84. pl. 91.

Compsocoma notabilis, Sclater, ib.

Flavo-olivacea: capite undique et mento nigris: nucha triangulariter flava: alis nigris, cæruleo marginatis, tectricibus autem summis dorso concoloribus: cauda nigra, marginibus vix cærulescentibus: subtus aurantio-flava.

Long. tota 7·2, alæ 3·7, caudæ 3·0.

Hab. Ecuador, vicinity of Quito (*Jameson*).

Mus. Gul. Jardine, Britannico, Joh. Gould.

Since Sir William Jardine received his first examples of this beautiful species, which were transmitted by Professor Jameson from the Eastern Cordilleras near Quito, Mr. Gould has obtained other specimens from the same country. Some of these latter are now in the British Museum.

Genus XXIX. BUTHRAUPIS.

Buthraupis, Cab. Mus. Hein. p. 29 (1850).

Rostrum forte, subincurvum, breve, altum, compressiusculum, dente finali distincto: alæ longæ, remigibus tertia et quarta longissimis: cauda longa et paulum rotundata: pedes validi: tarsi longi: sexus similes: ptilosis cærulea, nigra et flava.

1. BUTHRAUPIS MONTANA.

Aglaia montana, Lafr. & d'Orb. Mag. de Zool. 1837, p. 32.

Tanagra montana, d'Orb. Voy. p. 275. pl. 23. fig. 1; Gray, Gen. p. 365; Bp. Consp. p. 239.

Buthraupis montana, Sclater, Tan. Cat. Sp. p. 10.

Supra cærulea; cervice postica valde dilutiore, argentea: capite toto undique cum gutture atris: abdomine flavo.

Long. tota 9·0, alæ 5·0, caudæ 3·4.

Hab. Bolivia, prov. Yungas (*d'Orb.*).

Mus. Parisiensi, Britannico, Derbiano.

2. BUTHRAUPIS CUCULLATA.

Tanagra cucullata, Jard. Ill. Orn. n. s. pl. 43.

"*Tanagra montana*, d'Orb.," Less. Descr. d. Mamm. et Ois. p. 348.

Dubusia gigas, Bp. Rev. Zool. 1851, p. 171, & Note s. l. Tang. p. 22.

Buthraupis cucullata, Sclater, P. Z. S. 1855, p. 157.

Supra læte cærulea: capite toto cum gutture atris: abdomine flavo.

Long. tota 8·2, alæ 5·2, caudæ 3·6.

Hab. New Grenada, Bogota; Ecuador, vic. of Quito (*Jameson*).

This is a common species in Bogota collections. In Gray's Genera and Prince Bonaparte's Conspectus it is erroneously united to *B. eximia*, from which it is quite distinct. Sir William Jardine possesses examples transmitted by Professor Jameson from the forests of the Andes near Quito, which are rather larger than Bogota skins, and have the bill stronger and are less black on the throat.

3. BUTHRAUPIS CHLORONOTA.

Buthraupis chloronota, Sclater, P. Z. S. 1854, p. 97. pl. 64; Tan. Cat. Sp. p. 15.

Supra viridis: pileo cæruleo: alis caudaque nigris, illarum tectricibus minoribus cæruleis; majoribus et secundariis viridi limbatis: subtus flava, crisso saturatiore: gutture toto atro: rostro et pedibus nigris.

Long. tota 8·8, alæ 4·6, caudæ 3·8.

Hab. Ecuador, vic. of Quito (*Jameson*).

Mus. Gul. Jardine, Bart., et P. L. S.

4. BUTHRAUPIS EXIMIA.

Tanagra eximia, Boiss. Rev. Zool. 1840, p. 66; Gray's Gen. p. 365; Bp. Consp. p. 239.

Tanagra (*Saltator*) *eximia*, Less. Descr. d. Mamm. et Ois. p. 346.

Buthraupis eximia, Cab. Mus. Hein. p. 29; Sclater, P. Z. S. 1855, p. 157.

Supra viridis: pileo, tectricibus alarum minoribus et dorso postico cæruleis: capitis lateribus, gutture et cervice antica nigris: abdomine flavo.

Long. tota 7·2, alæ 4·6, caudæ 3·5.

Hab. New Grenada, Bogota.

Mus. Brit., Paris., &c.

Genus XXX. STEPHANOPHORUS.

Stephanophorus, Strickl. P. Z. S. 1841, p. 30.

Rostrum breve, altum, latum; mandibulis intumidis; culmine multum incurvo, gonyde ascendente; dente finali indistincto: alæ modicæ, rotundatæ, remigibus tertia quarta et quinta fere æqualibus, quarta paulo longissima: cauda longa, rotundata: ptilosis cærulescens: sexus similes.

1. STEPHANOPHORUS LEUCOCEPHALUS.

Lindo azul cabeza blanca, Azar. Pax. i. p. 375.

Tanagra leucocephala, Vieill. N. D. d'H. N. xxxii. p. 408; Enc. Méth. p. 774.

Tanagra diademata, Mikan, Fl. et F. Bras. pl. 4; Temm. Pl. Col. 243.

Pyrrhula cærulea, Vieill. Gal. Ois. p. 61. pl. 54.

Nemosia diademata, Steph. Zool. xiv. p. 5.

Stephanophorus cæruleus, Strickl. P. Z. S. 1841, p. 31; Gray, Gen. p. 365; Bp. Consp. p. 234.

Stephanophorus leucocephalus, Hartl. Ind. Az. p. 6.

Niger, sericeo-cærulescens: fronte loris et gutture cum alis caudaque nigris: alarum tectricibus cæruleis, remigibus et rectricibus cæruleo anguste limbatis: pileo postico albescenti-cæruleo: vertice mediali igneo-rubra: rostro et pedibus nigris.

Long. tota 7·0, alæ 4·0, caudæ 3·4.

Hab. South Brazil, S. Paolo (*Natt.*); Uruguay; Paraguay (*Azar.*).

Mus. Brit., Paris., Berol.

Genus XXXI. PŒCILOTHRAUPIS.

Pœcilothraupis, Cab. Mus. Hein. p. 30 (1850).

Anisognathus, Reich. Av. S. N. pl. 77 (1850).

Rostrum Tanagræ, *sed rectius, brevius et basi dilatata, culmine minus incurvo: alæ longæ, remigibus tertia, quarta et quinta longissimis, secunda sextam æquante: cauda longa quadrata: sexus similes: ptilosis nigra, rubro aut flavo varia.*

1. PŒCILOTHRAUPIS LUNULATA.

Tanagra lunulata, DuBus, Bull. Ac. Brux. vi. pt. 1. p. 439 (cum fig.) (1839); Esq. Orn. pl. 4; Bp. Consp. p. 239.

Tanagra (*Euphone*?) *constantii*, Boiss. R. Z. 1840, p. 3.

Aglaia erythrotis, Jard. & Selby, Ill. Orn. n. s. pl. 36 (1840).

Tanagra erythrotis, Less. Echo d. M. S. 1843, p. 947.

Tanagra igniventris, Tsch. Wiegm. Arch. 1844, p. 287; F. P. p. 203?

Tachyphonus lunulatus, Gray's Gen. p. 365. sp. 18.

Pœcilothraupis igniventris, Cab. Mus. Hein. p. 30.

Niger: uropygio et alarum tectricibus minoribus cæruleis: macula auriculari magna et abdomine rubris, crisso nigro, interdum rubro variegato.

Long. tota 7·0, alæ 3·8, caudæ 3·4.

Hab. New Grenada, Bogota; Ecuador, elevated region of the Andes near Quito (*Jameson*); Peru, Cordilleras, alt. 10,000 feet (*Tsch.*).

Mus. Brit., Paris., &c.

This species appears certainly distinct from d'Orbigny's *P. igniventris*, with which it is sometimes united. In that bird there are blue edgings to the wings and tail, and the crissum is wholly red. In the present species the crissum is sometimes partly red, but I have never observed any traces of blue markings on the wings or tail.

2. Pœcilothraupis igniventris.

Aglaia igniventris, d'Orb. & Lafr. Syn. Av. in Mag. de Zool. 1837, p. 32.

Tanagra igniventris, d'Orb. Voy. p. 275. pl. 25. fig. 2; Bp. Consp. p. 239 (partim).

Anisognathus igniventris, Sclater, Tan. Cat. Sp. p. 11.

Supra cærulescenti-ardesiacus: capite colloque nigris: uropygio cæruleo: alis nigris; tectricibus alarum minoribus et tectricum majorum necnon remigum rectricumque marginibus cæruleis: macula magna auriculari utrinque et ventre toto cum crisso ruberrimis.

Long. tota 6·5, alæ 3·3, caudæ 2·8.

Hab. Bolivia, prov. Apolobamba (*d'Orb.*).

Mus. Brit., Bremensi, Derbiano.

3. Pœcilothraupis lacrimosa.

Tachyphonus lacrimosus, DuBus, Esq. Orn. pl. 10; Gray's Gen. App. p. 17; Bp. Consp. p. 237.

Tanagra palpebrosa, Lafr. R. Z. 1847, p. 71; Gray's Gen. App. p. 16; Bp. Consp. p. 239.

Anisognathus lacrimosus, Sclater, Tan. Cat. Sp. p. 11.

Ardesiaco-niger: uropygio, tectricibus alarum minoribus et tectricum majorum necnon remigum rectricumque marginibus cæruleis: macula magna auriculari et parva suboculari utrinque cum corpore toto subtus aurantiis.

Long. tota 6·8, alæ 3·5, caudæ 3·0.

Hab. New Grenada, Pasto (*Lafr.*); Bogota (*Mus. Brit.*); Eastern Peru (*DuBus*).

Mus. Brit., Derbiano, Bruxell.

Genus XXXII. Iridornis.

Iridosornis, Less. Echo d. M. S. 1844, p. 80.

Pœcilornis, Hartl. R. Z. 1844, p. 369.

Euthraupis, Cab. Mus. Hein. p. 30 (1850).

Rostrum subrectum, maxime compressum, culmine incurvo, gonyde ascendente, dente finali distincto: alæ modicæ; remigibus tertia, quarta et quinta longissimis, sexta his paulo breviore et secundam superante: cauda longiuscula, rectricibus acutis: ptilosis nitens, nigra, purpurea, flava: sexus similes.

1. Iridornis dubusia.

Arremon rufivertex, Lafr. R. Z. 1842, p. 335 (err.); Gray, Gen. p. 361. sp. 3.

Iridosornis rufivertex, Less. Echo d. M. S. 1844, p. 80; R. Z. 1844, p. 431; Descr. d. Mamm. et Ois. p. 350.

Pœcilornis rufivertex, Hartl. R. Z. 1844, p. 369.

Tanagra dubusia, Bp. Consp. p. 239.

Euthraupis dubusia, Cab. Mus. Hein. p. 30.

"*Tanagra chrysolopha*, auct.," Bp. R. Z. 1851, p. 131; Note s. l. Tang. p. 6.

Iridosornis dubusia, Strickl. Cont. Orn. 1852, p. 127. pl. 94.

Iridornis dubusia, Sclater, P. Z. S. 1855, p. 157.

Nigra; dorso toto cum tectricibus alarum minoribus et pectore purpureis; abdomine sensim obscuriore: ventre imo et crisso castaneis: pileo medio nuchaque cristatis, aurantiis: alis caudaque extus purpurascente marginatis: mandibula inferiore albicante, superiore cum pedibus nigris.

Long. tota 5·5, alæ 3·0, caudæ 2·6.

Hab. New Grenada, Bogota.

Mus. Brit., &c.

2. IRIDORNIS ANALIS.

Tanagra analis, Tsch. in Wiegm. Arch. 1844, p. 286; F. P. p. 205. pl. 18. fig. 1; Gray, Gen. App. p. 16; Lafr. R. Z. 1847, p. 71 (?).

Calliste analis, Bp. Consp. p. 236. sp. 42.

Euthraupis analis, Cab. Mus. Hein. p. 30 (note).

Supra ex cinereo-viridescens, alis caudaque nigris viridescente limbatis: fronte et capitis lateribus nigris: pileo plumbescente: subtus ochracea, mento summo nigro, gutture toto aureo: crisso castaneo: rostro albicante, culmine nigro.

Long. tota 6·0, alæ 3·3, caudæ 2·5.

Hab. Western Peru, fruit gardens of Lima (*Tsch.*).

Mus. Bremensi.

This species and the next following are certainly not very typical *Iridornithes*, but without creating a new generic appellation for them, I hardly know at present where to place them more satisfactorily.

3. IRIDORNIS PORPHYROCEPHALA.

"*Tanagra analis*, Tsch.," Licht. in Mus. Berol.

Iridornis porphyrocephala, Sclater, P. Z. S. 1855, p. 227. pl. cx.

Supra purpurea, dorso imo et alarum caudæque marginibus viridescentibus: fronte, loris, mento summo et regione auriculari nigris: gutture late et læte aureo-flavo: pectore summo purpurascente; ventre viridescente, medialiter rufescenti-ochraceo: ano intense ferruginescenti-castaneo: tectricibus alarum inferioribus viridescentibus: rostro superiore nigro, inferiore albo.

Long. tota 5·6, alæ 3·0, caudæ 2·2.

Hab. New Grenada; Ecuador, vic. of Quito.

Mus. Berol. et Joh. Gould.

This bird may be distinguished from the preceding species by its purple head and upper back, and the greenish tinge of the lower plumage.

Genus XXXIII. CALLISTE.

Calliste, Boie, Isis, 1826, p. 978.
Aglaia, Sw. Zool. Journ. iii. p. 347 (1827).
Calospiza, G. R. Gray, List of Gen. 1840.
Tatao, Bp. Compt. Rend. xxxii. p. 80 (1851).
Chrysothraupis, Bp. R. Z. 1851, p. 142.
Ixothraupis, Bp. R. Z. 1851, p. 143.
Gyrola, Rchb. Av. S. N. pl. 77 (1850).
Euschemon, Sclater, Cont. Orn. 1851, p. 95.
Euprepiste, Sclater, Cont. Orn. 1851, p. 95.
Procnopis, Cab. Wiegm. Arch. 1844, p. 284.
Chalcothraupis, Bp. R. Z. 1851, p. 144.

Rostrum rectum, breve, tenue, compressiusculum, culmine incurvo, gonyde paulum ascendente, dente finali distincto : alæ elongatiores, remigibus secunda, tertia et quarta longissimis, prima breviore : cauda modica, quadrata : pedes plerumque debiles : ptilosis nitidissima : sexus adulti plerumque similes : juniores colore obscuriores.

a. *Tatao.*

1. CALLISTE TATAO.

Tangara du Brésil, Buff. Pl. Enl. 127. fig. 1.
Tangara, Buff. Pl. Enl. 7. fig. 1 (fig. pess.) ; Briss. Orn. iii. p. 3.
Le Septicolor, Buff. H. N. iv. 278.
Tanagra tatao, Linn. S. N. i. 315 ; Kittl. Küpf. d. Vög. pl. 31. fig. 3 ; Vieill. Enc. Méth. p. 778 ; Hayes, Osterly Park, p. 32 ; d'Orb. Voy. p. 270 ?
Aglaia tatao, Lafr. et d'Orb. Syn. Av. in Mag. de Zool. 1837, p. 32 ?
Aglaia paradisea, Sw. Class. Birds, ii. p. 286.
Callispiza tatao, Schomb. Reise, iii. p. 669 ; Cab. Mus. Hein. p. 26.
Tatao paradisea, Bp. Note s. l. Tang. p. 15 ; Rev. Zool. 1851, p. 141.
Calliste tatao, Gray, Gen. B. p. 366. sp. 13 ; Bp. Consp. p. 234. sp. 13 ; Sclater, Jard. Cont. Orn. 1851, p. 50.
Tangara septicolor, Desm. Tan. pl. 1.
The Paradise Tanager, Lath. G. H. vi. p. 27.
Titmouse of Paradise, Edwards, Glean. t. 349.

Supra velutino-atra : dorsi postici parte superiore coccinea, inferiore aurea : pilei summi et capitis laterum pennis coarctatis et squamatis, colore lætissime viridibus : fronte et oculorum ambitu anguste nigris : tectricibus alarum summis et corpore subtus splendide cæruleis ; gutture et pectore summo cum tectrici-

bus alarum mediis et marginibus remigum externarum purpureis: ventre medio crissoque atris.

♀. *Mari similis, sed coloribus minus vividis; dorso postico omnino aureo.*

Long. tota 4·7, alæ 2·7, caudæ 2·0.

Hab. Cayenne; Brit. Guiana (*Schomb.*); Upper Rio Negro (*Wallace*).

Mus. Brit., &c.

2. CALLISTE CŒLICOLOR.

Calliste cœlicolor, Sclater, Cont. Orn. 1851, p. 51; P. Z. S. 1855, p. 157.

Supra velutino-atra: dorsi postici parte superiore coccinea, inferiore aurea: pilei usque ad nucham et capitis laterum pennis coarctatis et squamatis, colore lætissime viridibus: fronte angustissima et oculorum ambitu nigris: tectricibus alarum summis et corpore subtus splendide cæruleis: gutture cum tectricum alarum mediarum et remigum externarum marginibus purpureis: ventre medio et crisso atris.

♀. *Mari similis, sed coloribus obscurioribus et dorso postico omnino flavo.*

Long. tota 5·0, alæ 3·1, caudæ 2·1.

Hab. New Grenada, Bogota.

Mus. Brit.

3. CALLISTE YENI.

Aglaia chilensis, Vig. P. Z. S. 1832, p. 3; Jard. & Selb. Ill. Orn. n. s. pl. 25.

Aglaia yeni, Lafr. & d'Orb. Syn. Av. in Mag. de Zool. 1837, p. 31.

Tanagra yeni, d'Orb. Voy. p. 270. pl. 24. fig. 2.

Callospiza yeni, Tsch. Wiegm. Arch. 1844, p. 286; Tsch. F. P. p. 201.

Calliste chilensis, Gray, Gen. p. 366. sp. 14.

Calliste yeni, Bp. Consp. p. 234; Sclater, Cont. Orn. 1851, p. 51.

Tatao yeni, Bp. R. Z. 1851, p. 141; Note s. l. Tang. p. 15.

Supra velutino-atra: dorso postico toto ruberrimo: pilei et capitis laterum pennis coarctatis et squamatis, colore lætissime viridibus: oculorum ambitu anguste nigro: tectricibus alarum summis et corpore subtus splendide cæruleis; gutture et tectricum alarum mediarum et remigum externarum marginibus purpureis: ventre medio et crisso nigris.

Long. tota 5·2, alæ 2·9, caudæ 2·2.

Hab. Bolivia, Yuracares and Yungas (*d'Orb.*); Eastern Peru (*Tsch.*); River Ucayali (*Hawxwell*).

Mus. Brit., &c.

b. *Calliste.*

4. CALLISTE TRICOLOR.

Tang. cayanensis varia chlorocephalos, Briss. Orn. vi. App. p. 59.
Tang. varié à tête verte, Buff. Pl. Enl. 32. fig. 1 (♂).
Le Tricolor, Buff. H. N. iv. 276 (partim).
Tanagra tricolor, Gm. S. N. i. 891; Vieill. Enc. Méth. p. 779; Temm. Pl. Col. 215. fig. 1 (♀).
Tanagra tatao, Max. Beitr. iii. 459.
Calliste tricolor, Gray, Gen. p. 366. sp. 1; Bp. Consp. p. 234; Sclater, Cont. Orn. 1851, p. 51.
Callispiza tricolor, Cab. Mus. Hein. p. 26.
Tatao tricolor, Bp. R. Z. 1851, p. 141; Note s. l. Tang. p. 16.
Tatao tricolor mâle, Desm. Tan. pl. 3.
Green-headed Tanager, Lath. G. H. vi. p. 24.

Læte viridis: rostri ambitu et collo antico interscapulioque nigris: capite undique et vitta gulam summam transeunte læte cærulescenti-viridibus: pectore cæruleo: dorsi postici parte superiore flammea: tectricibus alarum superioribus purpureis: rostro et pedibus nigris.

♀. *Mari similis, sed coloribus omnibus obscurioribus; dorso postico flavo.*

Long. tota 5·2, alæ 2·7, caudæ 2·1.
Hab. South-eastern Brazil (*P. Max.*).
Mus. Brit., &c.

5. CALLISTE FASTUOSA.

Tanagra fastuosa, Less. Cent. Zool. pl. 58. p. 184.
Calliste fastuosa, Gray, Gen. p. 366. sp. 20; Bp. Consp. p. 235; Sclater, Cont. Orn. 1851, p. 52.
Tatao fastuosus, Bp. R. Z. 1851, p. 142; Note s. l. Tang. p. 16.

Fronte, mento, gutture medio et interscapulio velutino-nigris: dorso postico aurantiaco: capite et cervice tota cum vitta gulam transeunte lætissime cæruleo-viridibus: alis caudaque nigris, purpureo marginatis: tectricibus alarum minoribus lætissime cæruleis: secundariarum trium ultimarum marginibus externis pallide aureis: abdomine toto purpureo, pectore lilacescente.

♀. *Mari similis, sed coloribus obscurioribus.*

Long. tota 5·5, alæ 2·8, caudæ 2·0.
Hab. Eastern Brazil, Pernambuco.
Mus. Brit., Paris., &c.

6. CALLISTE FESTIVA.

Tang. cayanensis varia cyanocephalos, Briss. Orn. vi. App. p. 62.
Tang. à tête bleue de Cayenne, Buff. Pl. Enl. 33. fig. 2 (♂).
Le Tricolor, Buff. H. N. iv. p. 276 (partim).
Tanagra tricolor, var. β, Gm. S. N. 892; Don. Nat. Rep. pl. 23.
Tanagra festiva, Shaw, Nat. Misc. pl. 537.

Tanagra cyanocephala, Vieill. N. D. d'H. N. xxxii. p. 425; Enc. Méth. p. 780; Temm. Pl. Col. 215. fig. 2 (♀).

Tanagra trichroa, Licht. Verz. d. Doubl. p. 30; Kittl. Küpf. d. Vög. pl. 31. fig. 1.

"*Tanagra rubricollis*, Temm.," Max. Beitr. iii. 456.

Aglaia cyanocephala, Sw. Orn. Dr. pl. 5.

Calliste festiva, Gray, Gen. p. 366. sp. 2; Bp. Consp. p. 234; Sclater, Cont. Orn. 1851, p. 51.

Callispiza festiva, Cab. Mus. Hein. p. 26.

Tatao festiva, Bp. R. Z. 1851, p. 142; Note s. l. Tang. p. 16.

Tangara tricolor femelle, Desm. Tan. pl. 4.

Green-headed Tanager, *var. A*, Lath. G. H. vi. p. 25.

Læte viridis: rostri ambitu et interscapulio nigris: pileo toto nuchaque cum gutture cæruleis: oculorum ambitu et pilei cærulei margine antica thalassinis: regione auriculari cum collo laterali et postico late rubris: alis caudaque nigris viridi limbatis; tectricibus alarum minoribus nigris aurantio terminatis: alis caudaque nigris.

♀. *Mari similis, sed coloribus dilutioribus; dorso viridi nigro variegato.*

Long. tota 5·0, alæ 2·5, caudæ 1·9.

Hab. South-eastern Brazil (*P. Max.*).

Mus. Brit.

7. Calliste cyaneiventris.

Tanagra cyanoventris, Vieill. N. D. d'H. N. xxxii. p. 426; Enc. Méth. p. 781.

Tanagra elegans, Max. Reise n. Bras. i. p. 187.

Tanagra citrinella, Temm. Pl. Col. 42. fig. 2; Max. Beitr. iii. p. 464.

Aglaia citrinella, Sw. Orn. Dr. pl. 6.

Calliste citrinella, Gray, Gen. p. 366. sp. 3; Bp. Consp. p. 234.

Callispiza citrinella, Cab. Mus. Hein. p. 26.

Chrysothraupis citrinella, Bp. R. Z. 1851, p. 142; Note s. l. Tang. p. 17.

Calliste cyanoventris, Sclater, Cont. Orn. 1851, p. 54.

Supra aureo-flava; dorso superiore et medio nigro variegatis: alis caudaque nigris viridi limbatis: infra nitide cyanea, mento summo et collo antico nigris: vitta gulam summam transeunte aurea, capite concolore: ventre medio crissoque ochracescenti-flavis viridi perfusis: rostro nigro: pedibus fuscis.

♀. *Mari similis, sed coloribus dilutioribus.*

Long. tota 5·25, alæ 2·7, caudæ 2·1.

Hab. South-eastern Brazil (*Temm.*).

Mus. Brit.

8. Calliste thoracica.

Tanagra thoracica, Temm. Pl. Col. 42. fig. 1.

Calliste thoracica, Gray, Gen. p. 366. sp. 4; Bp. Consp. p. 234; Sclater, Cont. Orn. 1851, p. 54.

Callispiza thoracica, Cab. Mus. Hein. p. 26.

Chrysothraupis thoracica, Bp. R. Z. 1851, p. 142; Note s. l. Tang. p. 17.

Supra nitide viridis nigro variegata: fronte nigra: regione oculari et vitta pileum anticum transeunte thalassino-cyaneis: gutture et pectore toto aurantio-flavis, plaga in gutture medio cum mento summo nigris: alis caudaque nigris viridi limbatis; tectricibus alarum summis nigris aurantio terminatis: abdomine nitide viridi, hypochondriis cyaneo tinctis: ventre medio et crisso flavicantibus.

♀. *Mari similis, sed coloribus dilutioribus.*

Long. tota 5·5, alæ 2·8, caudæ 2·4.

Hab. South-eastern Brazil (*Natt.*).

Mus. Brit., Paris., &c.

9. CALLISTE SCHRANKI.

Tanagra schrankii, Spix, Av. Bras. ii. p. 38. pl. 51 (♂) et (♀); d'Orb. Voy. p. 270. pl. 24. fig. 1.

Aglaia schrankii, Lafr. & d'Orb. Syn. Av. in Mag. de Zool. 1837, p. 31; Bp. P. Z. S. 1837, p. 122.

Aglaia melanotis, Sw. An. in Men. p. 355 (♀).

Calliste schrankii, Gray, Gen. p. 366. sp. 17; Bp. Consp. p. 235. sp. 18; Sclater, Cont. Orn. 1851, p. 54; P. Z. S. 1854, p. 115.

Callospiza schrankii, Tsch. Wiegm. Arch. 1844, p. 286, et F. P. p. 201.

Chrysothraupis schrankii, Bp. R. Z. 1851, p. 143; Note s. l. Tang. p. 17.

Læte viridis: interscapulii et secundariarum ultimarum pennis nigris, viridi marginatis: alis caudaque nigris cærulescenti-viridi limbatis: fronte lata et capitis lateribus nigris: pileo postico aureo: dorso imo cum pectore et ventre summo medialiter flavis: rostro et pedibus nigris.

♀. *Mari similis, sed coloribus minus vividis: capite viridi: uropygio flavicante.*

Long. tota 4·6, alæ 2·7, caudæ 1·7.

Hab. East Peru (*Tsch. & Hawxwell*); prov. Maynas (*Pöppig*); Ecuador, prov. Quixos; Bolivia, Yuracares (*d'Orb.*).

Mus. Brit., Paris.

c. *Ixothraupis*.

10. CALLISTE PUNCTATA.

Tangara viridis indica punctata, Briss. Orn. iii. 19.

Tang. verd tacheté des Indes, Buff. Pl. Enl. 133. fig. 1.

Le Syacou, Buff. H. N. iv. p. 288.

Tanagra punctata, Linn. S. N. i. 316.

Calliste punctata, Gray, Gen. p. 366. sp. 12; Bp. Consp. p. 234. sp. 8; Sclater, Cont. Orn. 1851, p. 55.

Callispiza punctata, Cab. Mus. Hein. p. 26.

Ixothraupis punctata, Bp. R. Z. 1851, p. 143; Note s. l. Tang. p. 18.

Spotted Green Titmouse, Edwards, Glean. vi. pl. 262.

Tangara syacou, Desm. Tan. pl. 8 et 9.

Supra læte viridis: capitis et dorso superioris pennis medialiter nigris viridi marginatis: alis caudaque nigris viridi limbatis: loris nigris: fronte angusta et ciliis oculorum albescentibus: subtus alba, viridi tincta et nigro guttata, lateraliter paulum flavescens: ventre medio albo: hypochondriis viridibus: crisso flavicante: rostro et pedibus nigris.

♀. *Minor et obscurior: guttis corporis inferi pæne obsoletis.*

Long. tota 4·6, alæ 2·5, caudæ 1·6.

Hab. Cayenne (*Buff.*).

Mus. Brit.

11. Calliste guttata.

Spotted Emerald Tanager, Lath. G. H. vi. 19.

Callospiza punctata, Cab. in Schomb. Reise, iii. p. 669.

Callispiza guttata, Cab. Mus. Hein. p. 26.

Calliste guttulata, Bp. Compt. Rend. Ac. Sc. Par. xxxii. p. 76; Sclater, P. Z. S. 1855, p. 157.

Calliste chrysophrys, Sclater, Cont. Orn. 1851, p. 24. pl. 69. fig. 2, et p. 54.

Ixothraupis guttulata, Bp. R. Z. 1851, p. 144; Note s. l. Tang. p. 18.

Supra aurescenti-viridis: capitis totius et dorsi superioris pennis medialiter nigris, viridi marginatis: fronte et regione oculari aureis: alis caudaque nigris, hac viridi, illis autem cærulescenti-viridi latius marginatis: loris nigris: subtus alba, cærulescente tincta et guttis rotundis præcipue in pectore perfusa: his maculis in gula minoribus: ventre medio albescente: lateribus et crisso flavo-virescentibus: rostro et pedibus nigris.

♀. *Paulo minor et coloribus minus claris.*

Hab. British Guiana (*Schomb.*); Venezuela; Trinidad; New Grenada, Bogota; Ecuador (*Bourcier*).

12. Calliste xanthogastra.

Calliste xanthogastra, Sclater, Cont. Orn. 1851, p. 23 & 55; P. Z. S. 1854, p. 115, et 1855, p. 157.

Ixothraupis chrysogaster, Bp. Rev. Zool. 1851, p. 144; Note s. l. Tang. p. 18.

Læte viridis: capitis et corporis inferi ad medium pectus pennis medialiter nigris, viridi late circumcinctis: interscapulii, alarum et caudæ plumis nigris, cærulescenti-viridi late marginatis: ventre medio flavo: lateribus viridibus: tectricibus subalaribus albis: rostro et pedibus nigris.

Long. tota 4·2, alæ 2·5, caudæ 1·5.

Hab. New Grenada, Bogota; Eastern Peru; Ecuador, prov. Quixos.

13. CALLISTE GRAMINEA.

Tang. tacheté de Cayenne, Buff. Pl. Enl. 301. fig. 1.
Le Syacou, Buff. H. N. iv. p. 288 (partim).
Tangara petit Syacou, Less. Trait. d'Orn. p. 462.
Tanagra graminea, Spix, Av. Bras. ii. p. 40. pl. 53. fig. 2 (♀).
Calliste virescens, Sclater, Cont. Orn. 1851, p. 22. pl. 69. fig. 1, et p. 56.
Ixothraupis pusilla, Bp. Rev. Zool. 1851, p. 144; Note s. l. Tang. p. 18.
Calliste graminea, Sclater, Tan. Cat. Sp. p. 11. sp. 17.

Viridis: alis caudaque nigris; harum marginibus externis cum interscapulio toto cærulescentibus: ventre medio vix flavescente.

♀. *Viridis fere unicolor: alis caudaque fusco-nigris, viridi limbatis; ventre flavescente.*

Long. tota 3·9, alæ 2·3, caudæ 1·5.
Hab. Cayenne; Lower Amazon.
Mus. Brit., Bruxell.

14. CALLISTE RUFIGULARIS.

Tanagrella rufigula, Bp. Compt. Rend. Ac. Sc. Par. xxxii. p. 77; Rev. Zool. 1851, p. 130; Note s. l. Tang. p. 4.
Calliste rufigula, Sclater, Cont. Orn. 1851, p. 55.

Supra niger: interscapulii, alarum et caudæ pennis anguste viridi marginatis: dorso imo pure pallido viridi: subtus virescenti-albida: pectoris et laterum pennis nigro guttatis; gula cupreseenti-rufa: abdomine medio albido; crisso ochracescente: tectricibus subalaribus albis: rostro nigro, basi plumbescenti-albida: pedibus nigris.

Long. tota 4·5, alæ 2·7, caudæ 1·7.
Hab. Ecuador, vic. of Quito (*Bourcier*) (*Jameson*).
Mus. Paris.

d. *Chrysothraupis*.

15. CALLISTE AURULENTA.

T. (*Aglaia*) *aurulenta*, Lafr. R. Z. 1843, p. 290, et 1854, p. 207.
Calliste aurulenta, Gray's Gen. App. p. 17; Bp. Consp. p. 235; Sclater, Cont. Orn. 1851, p. 52 (partim); P. Z. S. 1855, p. 157.
Chrysothraupis aurulenta, Bp. R. Z. 1851, p. 142; Note s. l. Tang. p. 16.

Aurea, pileo aurantio tincto: interscapulio nigro variegato: loris et regione auriculari nigerrimis: alis caudaque nigris: alarum tectricibus omnibus et secundariis viridescenti-aureo limbatis; rectricum marginibus externis eodem colore vix tinctis: subtus aureo-flava: rostro et pedibus nigris.

Long. tota 5·0, alæ 2·8, caudæ 1·9.
Hab. New Grenada, Bogota.
Mus. Brit.

16. **Calliste sclateri.**

Calliste aurulenta, Sclater, Cont. Orn. 1851, p. 52.

Calliste sclateri, Lafr. Rev. Zool. 1854, p. 207; Sclater, P. Z. S. 1855, p. 157.

Supra lætissime aurea, regione oculari citrino-flava: loris et regione auriculari nigerrimis: dorso nigro variegato: alis caudaque nigris: alarum tectricibus omnibus et secundariis viridescenti-aureo limbatis: rectricum mediarum marginibus externis eodem colore vix tinctis: subtus saturate brunnescenti-aurea: rostro et pedibus nigris.

Long. tota 5·5, alæ 3·1, caudæ 2·1.

Hab. New Grenada, Bogota.

Mus. Lafresnayano.

17. **Calliste pulchra.**

Calospiza pulchra, Tsch. Av. Consp. in Wiegm. Arch. 1844, p. 285; F. P. p. 200. pl. 18. fig. 2; Gray, Gen. App. p. 17; Bp. Consp. p. 235. sp. 32; Lafr. R. Z. 1854, p. 206.

Aureo-flava: interscapulio limonaceo-flavo et nigro variegato: fronte angusta, mento summo, loris et regione auriculari cum alis caudaque nigerrimis: alarum tectricibus et secundariis viridescenti-aureo anguste limbatis: gutture et cervice antica castaneo-aureis: rostro et pedibus nigris.

Long. tota 5·75, alæ 3·3, caudæ 2·4.

Hab. Eastern wood-region of Peru (*Tsch.*); Quixos in Ecuador.

Mus. Neuchatel et Joh. Gould.

This bird may be distinguished from the two preceding by its larger size and chestnut throat.

18. **Calliste arthusi.**

Tanagra arthus, Less. Ill. Zool. pl. 9; Gray, Gen. p. 21.

Calliste arthusi, Bp. Consp. p. 235. sp. 36; Sclater, Cont. Orn. 1851, p. 53.

Chrysothraupis arthus, Bp. R. Z. 1851, p. 442; Note s. l. Tang. p. 16.

Supra lætissime aurea, rostri ambitu et regione auriculari nigris: interscapulio nigro variegato: alarum tectricibus et secundariis nigris virescenti-aureo limbatis: subtus castanea, gutture aureo: ventre medio pallide flavo.

Long. tota 5·7, alæ 3·0, caudæ 2·3.

Hab. Venezuela; Cariaco (*Dyson*), Caraccas (*Levraud*).

Mus. Brit., Parisiensi.

19. **Calliste icterocephala.**

Calliste icterocephala, Bp. Compt. Rend. Ac. Sc. Par. xxxii. p. 76; Sclater, Cont. Orn. 1851, p. 53. pl. 70. fig. 1.

Chrysothraupis icterocephala, Bp. Note s. l. Tang. p. 17; R. Z. 1851, p. 445.

Flava: interscapulio et tectricibus alarum summis nigro variegatis:

alis caudaque nigris aurescenti-viridi limbatis: gutture et torque cervicali undique pallide virescenti-argenteis.
Long. tota 5·0, alæ 2·8, caudæ 1·9.
Hab. Ecuador, valley of Punta playa (*Bourcier*).
Mus. Parisiensi.

e. *Euschemon.*

20. CALLISTE VITRIOLINA.

Callispiza vitriolina, Cab. Mus. Hein. p. 28.
Calliste ruficapilla, Sclater, Cont. Orn. 1851, p. 61; P. Z. S. 1855, p. 158.
Calliste vitriolina, Bp. R. Z. 1851, p. 159; Note s. l. Tang. p. 13.

Ex griseo nitenti-viridescens: pileo rufo: capitis lateribus nigris: alis caudaque nigris cærulescenti-viridi limbatis: subtus dilutior, ventre albidiore: crisso pallide rufescente.
♀. *Mari similis, sed coloribus dilutioribus et marginibus alarum viridescentibus.*
Long. tota 5·3, alæ 3·0, caudæ 2·2.
Hab. New Grenada, Bogota.
Mus. Brit., &c.

21. CALLISTE CAYANA.

Tang. cayanensis viridis, Briss. Orn. iii. 21.
Tanagra cayana, Linn. S. N. i. 315; Vieill. Enc. Méth. p. 777.
Fringilla autumnalis, Linn. S. N. i. p. 320?
Calliste cayana, Gray, Gen. p. 366. sp.; Bp. Consp. p. 234. sp. 1; R. Z. 1851, p. 140; Note s. l. Tang. p. 14.
Calospiza cayana, Schomb. Reise, iii. p. 670.
Callispiza cayana, Cab. Mus. Hein. p. 27.
Calliste chrysonota, Sclater, Cont. Orn. 1850, p. 50. pl. 51, et 1851, p. 62.
Moineau à tête rousse de Cayenne, Buff. Pl. Enl. 201. fig. 2 (*fig. pess.*).
Tang. à tête rousse de Cayenne, Buff. Pl. Enl. 290. fig. 1.
Le Passevert, Buff. H. N. iv. 273; Desm. Tan. pl. 10, 11.
The rufous-headed Tanager, Lath. G. H. vi. p. 30.

Flavescenti-ochracea: pileo cuprescenti-rufo: capitis lateribus nigris: alis nigris cærulescenti-viridi limbatis: gutture toto cærulescenti-nigro perfuso.
♀. *Obscurior: marginibus alarum et caudæ viridescentibus.*
Long. tota 4·8, alæ 2·7, caudæ 1·5.
Hab. Cayenne.
Mus. Brit.

22. CALLISTE CYANOLÆMA.

Calliste cyanolaima, Bp. Note s. l. Tang. p. 14; R. Z. 1851, p. 140.
Calliste cyanolæma, Sclater, Tan. Cat. Sp. p. 12. sp. 21.

Nitentissime flavescenti-ochracea: pileo cuprescenti-rufo: capitis *lateribus nigris · alis caudaque nigris viridescenti-cœruleo limbatis : gutture toto cyaneo relucente.*

♀. *Obscurior : marginibus alarum et caudæ viridescentibus.*

Long. tota 5·5, alæ 2·8, caudæ 2·1.

Hab. Interior of Venezuela, Rio Negro; Trinidad (?).

Mus. P. L. S.

Obs. Vix a *Calliste cayana* distincta, et crassitie paulo majore et coloribus clarioribus solum dignoscenda.

23. CALLISTE CUCULLATA.

Aglaia cucullata, Sw. Orn. Dr. pl. 7.

Calliste cucullata, Gray's Gen. p. 366. sp. 9; Bp. Consp. p. 234; Sclater, Cont. Orn. 1851, p. 63; Bp. R. Z. 1851, p. 14; Note s. l. Tang. p. 14.

Supra flavescenti-ochracea, viridescente tincta : pileo nigro-cinnamomeo : infra rufescentior ; pectore cœrulescente : alis caudaque nigris viridi limbatis : rostro validiore.

Long. tota 5·0, alæ 2·9.

Hab. Venezuela, Angostura.

Mus. Parisiensi, Stricklandico.

This is a scarce bird in collections, but I have no doubt about its being a good species. It is distinguishable from all its affines by its peculiar dark cinnamon-coloured head.

24. CALLISTE FLAVA.

Tang. brasiliensis flava, Briss. Orn. iii. 39.

Tanagra flava, Gm. i. p. 896; Lath. Ind. Orn. i. p. 431; Max. Beitr. iii. 467.

Lindo bello, Azara, Pax. i. p. 387.

Tanagra formosa, Vieill. N. D. d'H. N. xxxii. p. 407; Enc. Méth. p. 773.

Tanagra chloroptera, Vieill. N. D. d'H. N. xxxii. p. 407.

Aglaia flava, Sw. Zool. Ill. n. s. pl. .

Calliste flava, Gray, Gen. p. 366. sp. 15; Bp. Consp. p. 234; Sclater, Cont. Orn. 1851, p. 61; Bp. R. Z. 1851, p. 140; Note s. l. Tang. p. 14.

Callispiza flava, Cab. Mus. Hein. p. 27.

Yellow Tanager, Lath. G. H. p. 22.

Clare ochraceo-flava : alis caudaque nigris cœrulescenti-viridi limbatis : corpore subtus a mento ad ventrem medialiter nigro.

♀. *Ochraceo-flava, obscurior : dorso viridescente tincto : alis caudaque nigris viridi limbatis : gutture et pectore mediali albidis nigricante mixtis.*

Long. tota 5·8, alæ 2·9, caudæ 2·0.

Hab. South-eastern Brazil (*Max.*); Pernambuco (*Sw.*); Paraguay (*Azara*).

Mus. Brit., &c.

25. CALLISTE PRETIOSA.

Lindo precioso, Azara, Pax. i. p. 381.

Aglaia cayana, d'Orb. et Lafr. Syn. Av. in Mag. de Zool. 1837, p. 32?

Tanagra cayana, d'Orb. Voy. p. 272?

Calliste cayana, Hartl. Ind. Az. p. 6.

Tanagra gyrola, Max. Beitr. iii. 471 (partim); DuBois, Orn. Gal. pl. 87 (♂).

Callispiza preciosa, Cab. Mus. Hein. p. 27.

Calliste castanonota, Sclater, Cont. Orn. 1851, p. 63.

Calliste pretiosa, Bp. R. Z. 1851, p. 159; Note s. l. Tang. p. 14.

Nitenti-flavescenti-ochracea: capite toto cum cervice postica et dorso summo cupreseenti-rufis: remigibus rectricibusque nigris, cæruleo limbatis: loris nigris: subtus viridescens, abdomine medio cærulescente, ventre imo, crisso et tibiis pallide rufis.

♀. *Viridescens, plumarum marginibus obscurioribus: alis caudaque nigris viridi limbatis: pileo cuprescente: subtus dilutior, crisso rufescente.*

Long. tota 6·3, alæ 3·3, caudæ 2·3.

Hab. Southern Brazil, Rio Grande do Sul (*Plant*); Paraguay (*Azara*); Monte Video (*Selloe*); Curytiba (*Natt.*); Corrientes (*d'Orb.*).

Mus. Derbiano, Heineano, Bruxell., Vindob., Berol.

26. CALLISTE MELANONOTA.

Tanagra peruviana, Desm. Tan. pl. 11 (♂); Vieill. Enc. Méth. p. 778.

Tanagra gyrola, Max. Beitr. iii. 471 (partim); DuBois, Orn. Gal. pl. 87. p. 134 (♀).

Aglaia melanota, Sw. Orn. Dr. pl. 31 (♂), 43 (♀).

Calliste peruviana, Gray, Gen. p. 366. sp. 8; Bp. Consp. p. 234; R. Z. 1851, p. 140; Note s. l. Tang. p. 14; Sclater, Cont. Orn. 1851, p. 64.

Nitenti-flavescenti-ochracea: capite toto cum cervice postica saturate cupreo-rufis: interscapulio nigerrimo: remigibus rectricibusque nigris cærulescente limbatis: loris nigris: subtus clare viridis, ventre vix cærulescente: ventre imo, crisso et tibiis pallide rufis.

♀. *Supra viridis, interscapulio vix obscuriore: pileo et cervice postica cuprescentibus: loris nigris: subtus viridescens, ventre medio flavescenti-albido, imo cum crisso paululum rufescente.*

Long. tota 5·8, alæ 3·0, caudæ 2·0.

Hab. South-east Brazil (*Max.*).

Mus. Brit., &c.

I have not continued to employ Desmarest's name for this bird, because it is not found in Peru—but in South-eastern Brazil—a very different zoological province.

27. CALLISTE CYANOPTERA.

Aglaia cyanoptera, Sw. Orn. Dr. pl. 8.

Tanagra argentea, Lafr. R. Z. 1843, p. 69.

Calliste cyanoptera, Gray, Gen. p. 366. sp. 10; Bp. Consp. p. 234. sp. 15; R. Z. 1851, p. 140; Note s. l. Tang. p. 15; Sclater, Cont. Orn. 1851, p. 64.

Callispiza cyanoptera, Cab. Mus. Hein. p. 27.

Argentescenti-ochracea, viridi micans: capite undique cum gutture alis caudaque nigris: harum marginibus angustis clare cæruleis.

♀. *Viridescens, uropygio et ventre subtus flavescentioribus, capite obscuriore et cærulescente tincto: gutture albido: alis caudaque nigris viridi limbatis.*

Long. tota 5·5, alæ 3·0, caudæ 2·0.

Hab. Venezuela, Caraccas (*Levraud*).

Mus. Paris.

f. *Gyrola.*

28. CALLISTE GYROLA.

Tang. peruviana viridis, Briss. Orn. iii. p. 23.

Tanagra gyrola, Linn. S. N. i. 315; Lath. Ind. Orn. i. 427; Vieill. Enc. Méth. p. 778.

Aglaia chrysoptera, Sw. An. Men. p. 356.

Calliste gyrola, Gray, Gen. p. 366. sp. 5; Bp. Consp. p. 234; Sclater, Cont. Orn. 1851, p. 67.

Callispiza gyrola, Cab. Mus. Hein. p. 28.

Gyrola chrysoptera, Bp. R. Z. 1851, p. 139; Note s. l. Tang. p. 13.

Le Rouverdin, Buff. H. N. iv. 286.

Tang. du Pérou, Buff. Pl. Enl. 133. fig. 2.

Tang. rouverdin, mâle, Desm. Tan. pl. 6.

Red-headed Greenfinch, Edwards, Glean. pl. 23.

Red-headed Tanager, Lath. G. H. vi. 15.

Clare viridis: capite et mento summo castaneis: campterio aurescente: abdomine medio cærulescente: tibiis pallide rufis.

Long. tota 4·5, alæ 2·7, caudæ 1·8.

Hab. Cayenne; Brit. Guiana (*Sw.*).

Mus. Brit.

29. CALLISTE GYROLOIDES.

Aglaia gyrola, Lafr. et d'Orb. Syn. Av. in Mag. de Zool. 1837, p. 32.

Tanagra gyrola, d'Orb. Voy. p. 272.

Aglaia peruviana, Sw. An. in Men. p. 356.

Callospiza gyrola, Tsch. Wiegm. Arch. 1844, p. 286; F. P. p. 202.

Calliste cyanoventris, Gray, Gen. p. 366. sp. 19.

Aglaia gyroloides, Lafr. R. Z. 1847, p. 277.

Calliste gyroloides, Gray, Gen. App. p. 17; Bp. Consp. p. 234; Sclater, Cont. Orn. 1851, p. 67; P. Z. S. 1854, p. 115; 1855, p. 158; Cassin, Rep. U.S. Astron. Exp. ii. p. 182. pl. xix. fig. 1.

Gyrola cyanoventris, Bp. R.Z. 1851, p. 139; Note s. l. Tang. p. 13.

Clare viridis: capite et mento summo castaneis: torque nuchali et campteriis aurescentibus: dorso postico et abdomine toto cæruleis: tibiis pallide rufis.

Long. tota 5·0, alæ 2·9, caudæ 1·8.

Hab. Chiriqui, vic. of David (*Bridges*); New Grenada, Bogota; Ecuador, prov. Quixos; Eastern Peru (*Tsch.*); Bolivia, Yuracares (*d'Orb.*).

Mus. Brit., Paris., &c.

30. Calliste desmaresti.

Tang. rouverdin, femelle, Desm. Tan. pl. 7 (?).

Tanagra gyrola, Sw. Zool. Ill. n. s. pl. 28.

Calliste desmaresti, Gray, Gen. p. 366. sp. 6; Sclater, Cont. Orn. 1851, p. 67; Cassin, Rep. U.S. Astr. Exp. ii. p. 182. pl. xix. fig. 2.

Aglaia viridissima, Lafr. R. Z. 1847, p. 277.

Gyrola viridissima, Bp. R. Z. 1851, p. 139; Note s. l. Tang. p. 13.

Calliste viridissima, Bp. Consp. p. 234.

Clare viridis: capite toto et mento summo castaneis: tibiis pallide rufis.

Long. tota 5·0, alæ 2·7, caudæ 1·7.

Hab. Venezuela; Trinidad.

Mus. Brit., &c.

g. *Euprepiste.*

31. Calliste brasiliensis.

Tang. brasiliensis cærulea, Briss. Orn. iii. p. 9.

Tang. bleu de Brésil, Buff. Pl. Enl. 179. fig. 1.

Tanagra brasiliensis, Linn. S. N. i. p. 316; Vieill. Enc. Méth. p. 780; Max. Beitr. iii. p. 477.

Tang. barbadensis cærulea, Briss. Orn. iii. p. 8?

Tang. bleu de Cayenne, Buff. Pl. Enl. 155. fig. 1; H. N. iv. p. 282?

Tanagra barbadensis, Kuhl, Ind. Pl. Enl. p. 3; Temm. Ind. Pl. Col. p. 31?

Calliste albiventer, Gray, Gen. p. 366?

Calliste brasiliensis, Gray, Gen. p. 366. sp. 11; Bp. Consp. p. 234; Sclater, Cont. Orn. 1851, p. 68.

Callospiza barbadensis, Bp. Compt. Rend. Ac. Sc. Par. xxxii. p. 80.

Callospiza brasiliensis, Bp. R. Z. 1851, p. 468; Note s. l. Tang. p. 19; Cab. Mus. Hein. p. 27.

Nigra: capite antico et laterali cum gutture, pectore et lateribus necnon dorso postico alarum tectricibus et remigum marginibus externis cæruleis: rostri ambitu, torque gutturali interrupto, et maculis in lateribus pectoris et ventris nigris: abdomine medio et tectricibus subalaribus albis.

Long. tota 6·0, alæ 3·3, caudæ 2·2.

Hab. South-eastern Brazil, Rio (*Max.*).

Mus. Brit., &c.

32. CALLISTE FLAVIVENTRIS.

Tang. cayennensis cærulea, Briss. Orn. iii. p. 6.
Tang. tacheté de Cayenne, Buff. Pl. Enl. 290. fig. 2.
Tang. diable enrhumé, Buff. H. N. iv. 27; Desm. Tang. pl. 2.
Tanagra mexicana, Linn. S. N. i. 315.
Tanagra flaviventris, Vieill. N. D. d'H. N. xxxii. p. 411; Enc. Méth. p. 774.
Calliste mexicana, Gray, Gen. p. 366. sp. 21; Bp. Consp. p. 235.
Callospiza mexicana, Schomb. Reise, iii. 670.
Calliste flaviventris, Sclater, Contr. Orn. 1851, p. 69.
Callispiza flaviventris, Cab. Mus. Hein. p. 27.
Callospiza cayennensis, Bp. R. Z. 1851, p. 169; Note s. l. Tang. p. 20.
Black and Blue Tanager, Edwards, Glean. t. 350; Lath. G. H. vi. 35.

Nigra: capite antico et laterali cum gutture, pectore et lateribus necnon dorso postico et tectricum alarium majorum marginibus externis cæruleis; rostri ambitu, torque gutturali interrupto et maculis in lateribus pectoris et ventris nigris: tectricibus alarum minoribus turcoso-cæruleis: remigum externarum margine angusta cyanea: abdomine medio cum crisso et tectricibus subalaribus albis, sulphureo tinctis.

Long. tota 5·4, alæ 2·7, caudæ 1·8.
Hab. Cayenne; Upper Rio Negro (*Wallace*).
Mus. Brit., &c.

33. CALLISTE VIEILLOTI, sp. nov.

Tanagra flaviventris, Vieill. Enc. Méth. p. 774 (partim).
Callospiza mexicana, Bp. Compt. Rend. Ac. Sc. Par. xxxii. p. 80; R. Z. 1851, p. 169; Note s. l. Tang. p. 20.

Nigra: capite antico et laterali cum gutture, pectore et lateribus necnon dorso postico et tectricum alarium majorum marginibus externis cæruleis: rostri ambitu, torque gutturali interrupto et maculis in lateribus pectoris et ventris nigris: tectricibus alarum minoribus turcoso-cæruleis: remigum margine externa anguste viridescente: abdomine medio cum crisso et tectricibus alarum inferioribus clare flavis.

♀. *Ventre pallidiore.*
Long. tota 4·5, alæ 2·9, caudæ 1·7.
Hab. Trinidad.
Mus. Paris. et P. L. S.

This Tanager was first well-distinguished from *C. flaviventris* of Cayenne by Prince Bonaparte, who proposed to retain for it the Linnæan name *mexicana*. This I cannot assent to, as the bird has nothing to do with Mexico; and moreover, if that name is used at all, it must be applied to the Cayenne bird, as Linnæus's species was grounded principally on Brisson's *Tang. cayennensis cærulea*.

The *Calliste vieilloti* is common in collections from Trinidad, and may be readily recognized by its bright yellow belly and under wing-coverts, which in *C. flaviventris* are creamy white tinged with yellow.

34. Calliste boliviana.

Aglaia mexicana, Lafr. et d'Orb. Syn. Av. in Mag. de Zool. 1837, p. 32.

Tanagra flaviventris, d'Orb. Voy. p. 270.

Callospiza boliviana, Bp. Compt. Rend. Ac. Sc. Par. xxxii. p. 80; R. Z. 1851, p. 169; Note s. l. Tang. p. 20.

Calliste boliviana, Sclater, Contr. Orn. 1851, p. 69.

Nigra: capite antico et laterali cum gutture pectore et lateribus necnon dorso postico et tectricibus alarum minoribus cum marginibus tectricum majorum cæruleis: rostri ambitu, torque gutturali interrupto et maculis in lateribus pectoris et ventris nigris: remigum margine externa anguste cyanescente: abdomine medio crissoque cum tectricibus subalaribus flavissimis.

Long. tota 5·0, alæ 2·75, caudæ 1·9.

Hab. New Grenada, Bogota; East Peru; Upper Amazon, Ega (*Wallace*); Bolivia, Guarayos and Yuracares (*d'Orb.*).

Mus. Paris., Derbiano.

35. Calliste inornata.

Calliste inornata, Gould, P. Z. S. 1855, p. 158 (note).

Supra nigro-grisea: alis caudaque fusco-nigris: alarum tectricibus minoribus turcoso-cæruleis: subtus pallidior; abdomine toto crissoque et tectricibus subalaribus lactescenti-albis: rostro et pedibus nigris.

Long. tota 4·75, alæ 2·5, caudæ 1·75.

Hab. New Grenada, Bogota.

Mus. Joh. Gould.

This curious little bird, of which Mr. Gould possesses a single specimen, appears to me to represent an immature state of some species of true *Calliste*, probably as yet undescribed.

h. *Procnopis*.

36. Calliste atricærulea.

Procnopis atrocærulea, Tsch. in Wiegm. Arch. 1844, p. 285; F. P. p. 199. pl. 13. fig. 2.

Calliste atrocærulea, Gray, Gen. App. p. 17; Sclater, Contr. Orn. 1851, p. 59; Bp. Consp. p. 235.

Chalcothraupis atrocærulea, Bp. R. Z. 1851, p. 144; Note s. l. Tang. p. 19.

Cærulea: interscapulio nigro: capite toto ex cinereo cærulescente: nuchali macula dilute straminea: alis nigris cæruleo limbatis: gula et pectore cyaneis.

Hab. Eastern Peru (*Tsch.*); Bolivia (*Bridges*).

Mus. Neuchatel, Derbiano.

37. CALLISTE RUFICERVIX.

Aglaia ruficervix, Prev. Voy. Venus, Ois. pl. 5. fig. 1.

Arremon rufivertex, Gray, Gen. p. 361. sp. 3.

Procnopis atrocærulea et Tanagra ruficervix, Bp. Compt. Rend. 1851, xxxii. p. 77.

Chalcothraupis ruficervix, Bp. R. Z. 1855, p. 144; Note s. l. Tang. p. 18.

Calliste leucotis, Sclater, Contr. Orn. 1851, p. 58.

Calliste ruficervix, Sclater, Contr. Orn. 1851, p. 58; P. Z. S. 1855, p. 158.

Cærulea: dorsi plumis medialiter et intus nigris: alis caudaque nigris cæruleo limbatis: pileo et cervice postica purpureis: vitta lata trans nucham aurescenti-rufa: fronte, mento et loris nigris: ventre medio crissoque ochraceis.

Long. tota 4·5, alæ 2·8, caudæ 1·7.

Hab. New Grenada, Bogota; Ecuador, vic. of Quito (*Bourcier*).

Mus. Brit., Paris.

38. CALLISTE ATRICAPILLA.

Tanagra (*Aglaia*) *atricapilla*, Lafr. R. Z. 1843, p. 290.

Calliste atricapilla, Bp. Consp. p. 235; Sclater, Contr. Orn. 1851, p. 59.

Chalcothraupis atricapilla, Bp. R. Z. 1851, p. 144; Note s. l. Tang. p. 19.

Procnias heinei, Cab. Mus. Hein. p. 31 (jun.); Bp. R. Z. 1851, p. 134; Note s. l. Tang. p. 8.

Cærulescenti-argentea: alis caudaque nigris eodem colore limbatis: pileo toto nigerrimo: gutturis totius et pectoris plumarum basibus nigris, apicibus autem acutis et colore clare viridibus.

♀. *Viridis: pileo obscuriore: gutture mari simili, sed pallidiore.*

Long. tota 4·8, alæ 2·8, caudæ 1·7

Hab. New Grenada, Bogota; Venezuela, near Caraccas (*Dyson*); Popayan (*Mus. Derb.*).

Mus. Brit., Derbiano.

39. CALLISTE ARGENTEA.

Procnopis argentea, Tsch. Wiegm. Arch. 1844, p. 285; F. P. p. 199. pl. 14. fig. 2.

Calliste argentea, Gray, Gen. App. p. 14; Bp. Consp. p. 235; Sclater, Contr. Orn. 1851, p. 60.

Chalcothraupis argentea, Bp. R. Z. 1851, p. 145; Note s. l. Tang. p. 19.

Supra cinerascenti-argenteo-cyanescens, pileo nigro: gutture aurescenti-stramineo: pectore et ventre medio nigris.

Long. tota 5·5.

Hab. Eastern Peru (*Tsch.*).

Mus. Neuchatel et Derbiano.

40. CALLISTE NIGRIVIRIDIS.

Tanagra nigroviridis, Lafr. R. Z. 1843, p. 69; Mag. de Zool. 1843, pl. 43.

Calliste nigro-viridis, Gray, Gen. p. 366. sp. 23; Bp. Consp. p. 235; Sclater, Contr. Orn. 1851, p. 56; P. Z. S. 1855, p. 158.

Callispiza nigroviridis, Cab. Mus. Hein. p. 27.

T. (*Aglaia*) *nigroviridis*, Less. Descr. p. 348.

Chalcothraupis nigro-viridis, Bp. R. Z. 1851, p. 145; Note s. l. Tang. p. 19.

Nigra: pileo cervice et dorso postico cum corpore toto subtus argentescenti-cyaneis, plumis subtus nigris argentescenti-cyaneo terminatis: fronte, loris, regione oculari et mento nigris: abdomine medio albicante: remigibus rectricibusque nigris cyaneo marginatis: tectricibus alarum minoribus intense cyaneis: majoribus autem argentescenti-cyaneo marginatis.

Long. tota 5·0, alæ 2·9, caudæ 1·8.

Hab. New Grenada, Bogota; Ecuador, prov. Quixos; Western Ecuador, Calacali (*Bourcier*).

Mus. Paris., Brit.

41. CALLISTE CYANESCENS, sp. nov.

Nigra: pileo, cervice et dorso postico cum corpore subtus argentescenti-cyaneis; plumis subtus nigris argentescenti-cyaneo terminatis: fronte, loris, regione oculari et mento summo nigris: abdomine medio crissoque albis: alis caudaque nigris cyanescente marginatis, campteriis intensius cyanescentibus.

Long. tota 5·0, alæ 3·0, caudæ 1·9.

Hab. Venezuela, Caraccas (*Levraud*); Colonia di Tovar, alt. 8000 feet (*Dyson*).

Mus. Brit., Paris.

Obs. Affinissima *C. nigriviridi* et crassitie paulo majore, alæ totius marginibus cyanescentibus unicoloribus et colore pectoris cyanescentiore, ventris autem albidiore, vix distinguenda.

I have seen many specimens of this bird, which is the Venezuelan representative of *Calliste nigriviridis*. It is certainly very closely allied to that species, but presents as good distinctive characters as many other birds which are now generally allowed to be independent species.

42. CALLISTE LARVATA.

Calliste larvata, DuBus, Esq. Orn. pl. 9; Gray, Gen. App. p. 17; Bp. Consp. p. 236; Sclater, Contr. Orn. 1851, p. 64.

Tatao larvatus, Bp. R. Z. 1851, p. 142; Note s. l. Tang. p. 16.

Capite colloque toto cum gula nitidissime cuprescenti-aureis: rostri ambitu nigro; vitta ultra frontem et capitis lateribus cæruleis, hujus coloris margine posteriore in viridescentem transeunte: interscapulio, alis caudaque cum pectore toto nigris: tectricibus alarum minoribus cæruleis; mediarum autem et majorum marginibus cum *dorso postico cyaneis: remigibus et rectricibus aurescenti viridi limbatis: abdomine medio albo, utrinque cæruleo, lateribus viridescentibus: rostro et pedibus nigris.*

♀. *Coloribus minus claris.*

Long. tota 5·0, alæ 2·9, caudæ 1·8.

Hab. Southern Mexico, Tabasco (*Ghiesbreght*); Chamalican river, Spanish Honduras (*Dyson*).

Mus. Brit., Derbiano.

43. CALLISTE FRANCISCÆ.

Aglaia fanny (!), Lafr. R. Z. 1847, p. 72.

Calliste fanny, Gray, Gen. App. p. 17; Bp. Consp. p. 236. sp. 38; Des Murs, Icon. Orn. pl. 56. fig. 1.

Calliste franciscæ, Sclater, P. Z. S. 1856, p. 142.

Capite colloque toto cum gula nitidissime virescenti-aureis: rostri ambitu nigro, deinde cæruleo et in viridem transeunte: interscapulio alis caudaque cum pectore toto nigerrimis: dorso postico et tectricibus alarum mediis viridescenti-cyaneis; remigibus et rectricibus eodem colore anguste limbatis: tectricibus alarum summis cæruleis: abdomine medio crissoque albis, lateribus viridescenti-cæruleis: rostro et pedibus nigris.

Long. tota 5·0, alæ 2·8, caudæ 1·6.

Hab. Veragua (*Delattre*); vic. of David, prov. Chiriqui, Panama (*Bridges*).

Mus. Acad. Philadelph. et Joh. Gould.

This beautifully coloured bird, which was first discovered by Delattre in Veragua, has been generally supposed to be the same as the *C. larvata*, and it was only upon a close examination of the specimen lately procured by Mr. Bridges, and comparison of it with individuals of the other species, that I was enabled to recognize its difference. This *Calliste* is slightly smaller than the *larvata*, and has the head of a much lighter golden green, in some lights passing almost into pale green. In the other bird these parts are more of a coppery brown. In this species, also, the lower back and edgings of the middle and greater wing-coverts are of a much greener tinge, and there is more white in the middle of the belly and crissum.

44. CALLISTE NIGRICINCTA.

Aglaia nigro-cincta, Bp. P. Z. S. 1837, p. 121.

Calliste nigro-cincta, Gray, Gen. p. 366. sp. 16; Bp. Consp. p. 235; Sclater, Contr. Orn. 1851, p. 68.

Chalcothraupis nigro-cincta, Bp. R. Z. 1851, p. 145; Note s. l. Tang. p. 19.

Calliste thalassina, Strickl. Ann. N. H. (1844) xiii. p. 419; Gray, Gen. p. 366. sp. 30; Sclater, Contr. Orn. 1851, p. 57; P. Z. S. 1854, p. 115, et 1855, p. 158.

Aglaia wilsoni, Lafr. R. Z. 1847, p. 71.

Calliste wilsoni, Gray, Gen. App. p. 17; Bp. Consp. p. 236. sp. 37; Des Murs, Icon. Orn. pl. 56. fig. 2.

Chrysothraupis thalassina, Bp. R. Z. 1851, p. 143; Note s. l. Tang. p. 17.

Calliste larvata, Cassin, Rep. U.S. Astr. Exp. p.182. pl. xviii. fig. 2.

Capite et cervice undique cum gula thalassino-cyaneis, regione auriculari cum mento pallide viridibus: loris, interscapulio et pectore toto nigerrimis: dorso postico læte cæruleo: abdomine medio albo, lateribus cærulescentibus: remigibus et rectricibus nigris cærulescenti-viridi marginatis: tectricibus alarum summis læte cæruleis, mediis et majoribus viridibus.

Long. tota 5·0, alæ 2·8, caudæ 1·8.

Hab. New Grenada, Bogota; Ecuador, prov. Quixos; Eastern Peru, Guaunco (*Delattre*); River Ucayali (*Hawxwell*); Marabitanas on the Rio Negro (*Natt.*).

Mus. Brit., Derbiano, Vindobiensi.

45. CALLISTE CYANEICOLLIS.

Aglaia cyanicollis, Lafr. et d'Orb. Mag. de Zool. 1837, p. 33.

Tanagra cyanicollis, d'Orb. Voy. p. 271. pl. 25. fig. 1.

Callospiza cyanicollis, Tsch. Wiegm. Arch. 1844, p. 286; F. P. p. 202.

Aglaia cæruleocephala, Sw. An. in Men. p. 356.

Calliste cæruleocephala, Gray, Gen. p. 366. sp. 18; Bp. Consp. p. 235. sp. 19.

Calliste cyanicollis, Sclater, Contr. Orn. 1851, p. 115; P. Z. S. 1854, p. 115, et 1855, p. 158; Cassin, Rep. U.S. Astr. Exp. ii. p.181. pl. xviii. fig. 1.

Capite toto et gutture undique læte cyaneis: gula purpurascente: loris interscapulio et abdomine toto nigerrimis; hoc cæruleo lavato: dorso postico et alarum tectricibus pallide viridibus, tectricibus alarum summis aurescentioribus: remigibus et rectricibus nigris viridi anguste marginatis.

Long. tota 4·7, alæ 2·6, caudæ 1·7.

Hab. New Grenada, Bogota; Ecuador, prov. Quixos (*Gould*); Eastern Peru (*Tsch.*); Bolivia, Yuracares (*d'Orb.*).

Mus. Brit., Paris., &c.

46. CALLISTE LABRADORIDES.

Tanagra (*Aglaia*) *labradorides*, Boiss. R. Z. 1840, p. 67; Less. Descr. p. 347.

Aglaia labradorides, Prevost, Voy. Venus, Ois. pl. 5. fig. 2.

Calliste labradorides, Gray, Gen. p. 366. sp. 25; Bp. Consp. p. 235; Sclater, Contr. Orn. 1851, p. 57; P. Z. S. 1855, p. 158.

Chalcothraupis labradorides, Bp. R. Z. 1851, p. 144; Note s. l. Tang. p. 18.

Nitenti-viridis cæruleo vix tincta, capite aurescentiore: fronte, loris, mento summo, nucha et cervice postica cum scapularibus nigris: alis caudaque nigris cærulescenti-viridi marginatis; tectricibus

alarum summis cæruleis : ventre imo crissoque pallide ochraceis.
Long. tota 4·5, alæ 2·6, caudæ 1·7.
Hab. New Grenada, Bogota.
Mus. Brit., &c.

47. Calliste parzudakii.

Tanagra parzudakii, Lafr. R. Z. 1843, p. 97 ; Mag. de Zool. 1843, Ois. pl. 41.

Calliste parzudakii, Gray, Gen. p. 366. sp. 27 ; Bp. Consp. p. 235. sp. 26 ; Sclater, Contr. Orn. 1851, p. 66 ; P. Z. S. 1854, p. 115, et 1855, p. 158.

Chrysothraupis parzudakii, Bp. R. Z. 1851, p. 143 ; Note s. l. Tang. p. 18.

Nigra : dorso postico cum tectricibus alarum minoribus et tectricum majorum apicibus externis argenteo-cyanescentibus : pileo toto cum nucha et collo laterali flavissimis ; fronte et regione oculari ruberrimis : loris nigris : subtus argenteo-cyanescens ochraceo tincta ; gula nigra ; ventre medio crissoque ochraceis.
Long. tota 5·5, alæ 3·3, caudæ 2·0.
Hab. New Grenada, Bogota ; Ecuador, Quixos.
Mus. Brit.

48. Calliste lunigera.

Calliste lunigera, Sclater, Contr. Orn. 1851, p. 65. pl. 70. fig. 2.

Nigra : dorso postico cum tectricibus alarum minoribus et tectricum majorum secundariarumque marginibus argenteo-viridescentibus : pileo toto et capitis lateribus aurantiacis, macula magna auriculari cum gula nigris : pectore argenteo-viridescente ; abdomine rufescenti-ochraceo.
Long. tota 5·3, alæ 2·8, caudæ 1·8.
Hab. Western Ecuador, vicinity of Quito (*Jameson*).
Mus. Gul. Jardine, Bart. et P. L. S.

49. Calliste chrysotis.

Calliste chrysotis, DuBus, Esq. Orn. pl. 7 ; Gray, Gen. App. p. 17 ; Bp. Consp. p. 236 ; Sclater, Contr. Orn. 1851, p. 66.

Chrysothraupis chrysotis, Bp. R. Z. 1851, p. 142 ; Note s. l. Tang. p. 17.

Supra nigra : dorso postico et interscapulii alarumque pennarum omnium marginibus clare viridibus : pileo nigro : fronte aurescenti-viridi : regione auriculari cuprescenti-aureo : subtus clare viridis ; abdomine medio crissoque castaneis.
Long. tota 5·5, alæ 2·9, caudæ 1·9.
Hab. Eastern Peru (*DuBus*).
Mus. Bruxell., Derbiano.

50. CALLISTE XANTHOCEPHALA.

Callospiza xanthocephala, Tsch. Wiegm. Arch. 1844, p. 285; F. P. p. 200. pl. 17. fig. 2 (*fig. pess.*); Gray, Gen. App. p. 17; Bp. Consp. p. 235.

Calliste lamprotis, Sclater, Contr. Orn. 1851, p. 65.

Chrysothraupis xanthocephala, Bp. R. Z. 1851, p. 443; Note s. l. Tang. p. 17.

Læte cæruleo-viridis : interscapulii, alarum et caudæ plumis nigris eodem viridi limbatis : fronte, loris, gula summa et cervice postica nigris : pileo toto aurantiaco : capitis lateribus et regione auriculari flavissimis : ventre medio crissoque pallide ochraceis.

Long. tota 5·3, alæ 2·9, caudæ 1·9.

Hab. Eastern Peru (*Tsch.*); Bolivia (*Bridges*).

Mus. Brit., Neuchatel.

51. CALLISTE VENUSTA.

Calliste xanthocephala, Sclater, Contr. Orn. 1851, p. 58; P. Z. S. 1854, p. 115.

Calliste venusta, Sclater, P. Z. S. 1854, p. 248, et 1855, p. 158.

Læte cæruleo-viridis : interscapulii, alarum caudæque plumis nigris, eodem viridi marginatis : fronte, loris, gula summa et cervice postica nigris : pileo lateribusque capitis flavis : ventre medio crissoque pallide ochraceis : rostro nigro : pedibus pallidis.

Long. tota 4·5, alæ 2·5, caudæ 1·5.

Hab. New Grenada, Bogota; prov. Quixos in Ecuador.

Mus. Brit., Berol.

Genus XXXIV. DIVA.

Procnopis, Bp. Compt. Rend. xxxii. p. 80 (1851), nec Cab.

Diva, Sclater, Tan. Cat. Sp. p. 16 (1854).

Forma Callistæ, *sed rostro breviore et basi dilatata; dente finali obsoleto : alæ longæ, remigibus secunda, tertia et quarta longissimis, prima breviore quam quinta : cauda modica quadrata : ptilosis cærulea, unicolor.*

1. DIVA VASSORI.

Tanagra (*Euphone*?) *vassorii*, Boiss. R. Z. 1840, p. 4; Mag. de Zool. 1841, pl. 23.

Aglaia diva, Less. Echo d. M. S. 1844, p. 57; Descr. d. Mam. et Ois. p. 347.

Calliste vassorii, Gray, Gen. p. 366. sp. 26; Bp. Consp. p. 235. sp. 25; Sclater, Contr. Orn. 1851, p. 60.

Procnopis vassori, Bp. Compt. Rend. xxxii. p. 80; R. Z. 1851, p. 134; Note s. l. Tang. p. 9.

Diva vassori, Sclater, Tan. Cat. Sp. p. 13; P. Z. S. 1855, p. 158.

Lucide cærulea: loris, alis caudaque nigris: tectricibus alarum minoribus et tectricum majorum marginibus cæruleis.

♀ *aut junior. Griseo-cineracea: subtus clarior.*

Long. tota 4·7, alæ 2·8, caudæ 1·7.

Hab. Bogota.

Mus. Brit., &c.

The bird which I formerly described as *Pipridea albiventris* (Contr. Orn. 1852, p. 131. pl. 100. fig. 2), and afterwards made a second species of this form, is, I now think, though somewhat intermediate in characters, more strictly referable to the neighbourhood of the genus *Dacnis* in the family *Cærebidæ*.

Genus XXXV. Pipridea.

Pipraeidea, Sw. Zool. Journ. iii. p. 173 (1827).

Procnopis, Bp. Compt. Rend. xxxii. p. 80, nec Cab.

Rostrum Callistæ, *sed brevius, altius, basi dilatata, rictu plumoso: alæ modicæ, remigibus quatuor primis fere æqualibus sed secunda et tertia paulo longioribus: cauda modica subquadrata: ptilosis cærulea et rufa: sexus dissimiles.*

1. Pipridea melanonota.

Pico di punzon azul y canela, Azar. Pax. i. p. 413.

Tanagra melanonota, Vieill. N. D. d'H. N. xxxii. 407.

Tanagra melanotha, Vieill. Enc. Méth. p. 773.

Tanagra vittata, Temm. Pl. Col. 48 (♂ et ♀).

Pipraeidea cyanea, Sw. Zool. Journ. 1827, p. 173; Bp. Consp. p. 231.

Aglaia vittata, Darwin, Voy. Beagle, p. 98.

Calliste vittata, Gray, Gen. p. 366. sp. 24.

Procnopis vittata, Cab. in Wiegm. Arch. 1844, p. 284.

Procnopis melanota, Bp. Compt. Rend. xxxii. p. 80; R. Z. 1851, p. 134; Note s. l. Tang. p. 8.

Calliste melanonota, Sclater, Contr. Orn. 1851, p. 61.

Lipræidea melanonota, Sclater, Tan. Cat. Sp. p. 13.

Supra cærulea: interscapulio toto valde obscuriore, nigricanti-cæruleo tincto: alis caudaque nigris nigricante cæruleo limbatis: campteriis læte cæruleis: vitta lata frontali per oculos utrinque transeunte nigerrima: subtus ochracescenti-cinnamomea.

♀. *Obscurior: interscapulio fusco: alarum caudæque marginibus viridescentibus.*

Long. tota 5·8, alæ 3·1, caudæ 2·0.

Hab. Southern Brazil; Uruguay, Maldonado (*Darwin*); Paraguay (*Azara*).

Mus. Brit., &c.

2. Pipridea venezuelensis, sp. nov.

Supra læte cærulea: interscapulio alis caudaque nigris, cæruleo

tinctis: campteriis læte cæruleis: vitta frontali per oculos utrinque transeunte nigerrima: subtus ochracea.

Long. tota 5·1, alæ 3·1, caudæ 1·9.

Hab. Venezuela, Caraccas (*Levraud*).

Mus. Parisiensi.

Obs. Affinissima *P. melanonotæ*, sed paulo minor et colore cæruleo clariore et rostro breviore distinguenda.

3. PIPRIDEA CASTANEIVENTRIS.

Calliste castaneoventris, Sclater, Contr. Orn. 1851, p. 60.

Pipraidea castaneiventris, Sclater, Tan. Cat. Sp. p. 13.

Supra fusco-cærulea: alis caudaque nigris fusco-cæruleo limbatis: loris et regione oculari atris: infra brunneo-castanea: rostro elongatiore, mandibula inferiore brunnescente, superiore cum pedibus nigris.

Long. tota 6·4, alæ 3·15.

Hab. Bolivia (*Bridges*).

Mus. Derbiano.

Genus XXXVI. CHLOROCHRYSA.

Chlorochrysa, Bp. Compt. Rend. xxxii. p. 76 (1851).

Calliparæa, Bp. R. Z. 1851, p. 129.

Rostrum tenue, elongatum, mandibula superiore paulum incurva, inferiore rectissima: dente finali fere obsoleto: alæ elongatæ, remigibus quatuor primis fere æqualibus et longissimis: cauda brevi quadrata: ptilosis nitentissime viridis: sexus similes.

1. CHLOROCHRYSA CALLIPARÆA.

Callospiza calliparæa, Tsch. in Wiegm. Arch. 1844, p. 202; F. P. p. 202.

Calliste calliparæa, Gray, Gen. App. p. 17; Bp. Consp. p. 235. sp. 30.

Calliste bourcieri, Bp. Compt. Rend. Ac. Sc. Par. xxxii. p. 76.

Calliparæa bourcieri, Bp. R. Z. 1851, p. 129; Note s. l. Tang. p. 3.

Chlorochrysa calliparæa, Sclater, Contr. Orn. 1851, p. 99. pl. 73. fig. 1.

Lucide viridis: regione oculari dorso inferiore et ventre cærulescente tinctis: gula nigra: regione auriculari castanea: uropygio croceo.

Long. tota 4·6, alæ 2·8, caudæ 2·0.

Hab. Wood-region of E. Peru (*Tsch.*); Valley of Baños, Ecuador (*Bourcier*); Anolaima, New Grenada (*Chapoul*).

Mus. Berol., Parisiensi.

2. CHLOROCHRYSA PHŒNICOTIS.

Calliste phœnicotis, Bp. Compt. Rend. Ac. Sc. Par. xxxii. p. 76.

Calliparæa phœnicotis, Bp. R. Z. 1851, p. 129; Note s. l. Tang. p. 3.

Chlorochrysa phœnicotis, Sclater, Contr. Orn. 1851, p. 100. pl. 73. fig. 2.

Lucide viridis: tectricibus alarum minoribus, tibiis et macula altera suboculari et altera pone oculum utrinque splendenti-olivaceo-brunneis: his secundis maculis corallino-rubro versus nucham terminatis.

♀. *Mari similis sed minor.*

Long. tota 5·0, alæ 3·0, caudæ 1·7.

Hab. Ecuador, Nanegan, north of Quito (*Bourcier*).

Mus. Paris. et Gul. Jardine, Bart.

Genus XXXVII. TANAGRELLA.

Tanagrella, Sw. Class. B. ii. p. 121.

Hypothlypis, Cab. in Schomb. Reise, iii. p. 667.

Rostrum tenue, elongatum, mandibula inferiore recta, superiore incurva, dente finali indistincto: alæ longæ, remigibus secunda et tertia longissimis, prima quartam æquante et illis vix breviore: cauda longa quadrata: ptilosis nigro-cærulea: sexus similes.

1. TANAGRELLA VELIA.

Red-bellied Blue-bird, Edwards' Glean. pl. 22.

Motacilla velia, Linn. S. N. i. p. 336 (partim).

Le Pipit bleu de Surinam, Buff. Pl. Enl. 669. fig. 3.

Le Pitpit varié, Buff. H. N. v. 341.

Tangara varié, Desm. Tan. pl. 2.

Tanagra velia, Vieill. N. D. d'H. N. xxxii. p. 424; Enc. Méth. p. 780.

Tanagra varia, Steph. Zool. xiv. p. 7; Cuv. Règn. An. i. p. 367.

Hypothlypis iridina, Cab. in Schomb. Reise, iii. p. 667?

Tanagra iridina, Hartl. R. Z. 1841, p. 105?

Tanagrella iridina, Gray, Gen. p. 366.

Tanagrella velia, Bp. Consp. p. 236; Sclater, Contr. Orn. 1851, p. 97.

Red-bellied Tanager, Lath. G. H. vi. 34.

Nigra: gula, capitis lateribus, alarum caudæque marginibus et caudæ tectricibus superioribus cæruleis: dorso postico viridescente argenteo nitente: pileo antico viridescente cyaneo, versus rostrum cærulescentiore: loris et narium plumis nigris: subtus cærulea, collo antico nigro: pectore lilacescente: ventre medio et crisso castaneis: tectricibus subalaribus albis: rostro et pedibus nigris.

Long. tota 5·4, alæ 2·9, caudæ 2·0.

Hab. Cayenne; British Guiana (*Schomb.*).

Mus. Brit., &c.

2. TANAGRELLA ELEGANTISSIMA.

Tanagrella elegantissima, J. et E. Verr. Rev. Zool. 1853, p. 195.

Nigerrima: gula, capitis lateribus et pileo antico cum fronte et loris,

alarum caudæque marginibus et tectricibus caudæ superioribus lætissime cæruleis: dorso postico viridescente argenteo nitente: subtus cærulea, collari interrupto nigro: pectore paululum lilacescente: ventre medio et crisso castaneis: tectricibus alarum inferioribus albis: rostro et pedibus nigris.

Long. tota 5·5, alæ 3·0, caudæ 1·9.

Hab. New Grenada, Bogota; Rio Xié (*Natterer*); Porto Cabello (*Mus. Hein.*).

Mus. Heineano; Vindob.

This species, of which I have seen many examples in the most recently imported Bogota collections, is very closely allied to the *T. velia* of Cayenne; but in the present bird the front lores and throat are of the same full blue as the wing-edgings, and there is no tinge of greenish colouring on the head as in its Cayenne representative. The whole colouring is also generally more intense, and the black collar on the throat is narrower and less defined.

3. TANAGRELLA CYANOMELAS.

Sylvia surinamensis cærulea, Briss. Orn. iii. p. 536?
Motacilla velia, Gm. S. N. i. 991 (partim).
Tanagra cyanomelas, Max. Beitr. iii. 453.
Tanagrella multicolor, Sw. An. in Men. p. 313.
Tanagrella tenuirostris, Sw. Class. ii. p. 121.
Tanagrella velia, Gray, Gen. p. 366. sp. 1.
Tanagrella cyanomelas, Bp. Consp. p. 236; Sclater, Contr. Orn. 1851, p. 97.

Nigra: gula, fronte, capitis lateribus, marginibus alarum et caudæ cum tectricibus caudæ superioribus cæruleis: pileo antico supra frontem et dorso postico viridescenti-argenteis: subtus læte cærulescenti-grisea, ventre medio et crisso castaneis: collari interrupto nigro: tectricibus subalaribus albis.

Long. tota 5·7, alæ 3·0, caudæ 2·2.

Hab. South-eastern Brazil (*Max.*).

Mus. Brit., &c.

4. TANAGRELLA CALOPHRYS.

Hypothlypis callophrys, Cab. in Schomb. Reise, iii. 668 (note).
Tanagrella callophrys, Bp. Compt. Rend. 1851, p. 77; R. Z. 1851, p. 130; Note s. l. Tang. p. 5; Sclater, Contr. Orn. 1851, pl. 74. p. 98.

Supra nigerrima: fronte angusta, capitis lateribus cum marginibus alarum et caudæ et tectricibus caudæ superioribus cæruleis: pileo mediali cum superciliis latis et elongatis et dorso postico viridescenti-argenteis: subtus cærulea, ventre imo et crisso nigris: tectricibus subalaribus nigricanti-cinereis: rostro et pedibus nigris.

Long. tota 5·4, alæ 3·0, caudæ 2·0.

Hab. Ecuador, prov. Quixos (*Bourcier*); East Peru, river Ucayali (*Hawxwell*).

Mus. Berol.

Genus XXXVIII. GLOSSIPTILA.

Neornis, Hartl. 1846, Nachtr. z. Verz. Brem. Mus., nec Hodgs.

Rostrum tenue, elongatum, incurvum, commissura arcuata, gonyde recta, dente finali nullo : alæ longæ, remige tertia et quarta longissimis et secundam paulo superantibus, prima paulo breviore quam quinta : cauda breviuscula quadrata : sexus dissimiles : ptilosis mascula cærulea, fœminea grisea.

1. GLOSSIPTILA RUFICOLLIS.

Motacilla campestris, Linn. S. N. i. p. 329 (♀)?

Rufous-throated Tanager, Lath. Syn. ii. pt. 1. p. 241.

Tanagra ruficollis, Gm. S. N. ii. p. 894 ; Edwards, Glean. pl. 122.

Tanagrella ruficollis, Gray, Gen. App. p. 17 ; Bp. Consp. p. 236 ; Gosse, B. of Jam. p. 236 ; Ill. B. Jam. pl. 58.

Tachyphonus rufigularis, Lafr. R. Z. 1846, p. 320.

Pyrrhulagra ruficollis, Bp. Consp. p. 236 (excl. syn.).

Neornis cærulea, Hartl. Nachtr. z. Verz. Mus. Brem. p. 8 (descr. nulla).

Rufous-chinned Finch, var. A, Lath. G. H. vi. 126.

Cærulescenti-plumbea, facie nigricante : plaga magna gutturali castaneo-rufa.

♀. *Capite colloque viridescenti-griseis : dorso olivascenti-brunneo : subtus cinerea, medialiter albescens.*

Long. tota 4·8, alæ 2·8, caudæ 1·8.

Hab. Jamaica (*Gosse*) ; S. Domingo.

Mus. Paris., Brit.

Genus XXXIX. CHLOROPHONIA.

Chlorophonia, Bp. R. Z. 1851, p. 137.

Triglyphidia, Reich. Av. Syst. Nat. pl. 73.

Genus vix ab Euphonia *diversum : rostrum minus altum et basi magis dilatata : alæ longæ : remigibus 4 primis inter se fere æqualibus : cauda brevissima : tarsi breves : ptilosis læte viridis, flavo varia : sexus dissimiles.*

1. CHLOROPHONIA VIRIDIS.

Tanagra viridis, Vieill. N. D. d'H. N. xxxii. p. 426 ; Temm. Pl. Col. 36. fig. 3.

Pipra chlorocapilla, Shaw, Zool. xiii. p. 255.

Euphonia viridis, Gray, Gen. p. 367. sp. 10 ; Tsch. in Wiegm. Arch. 1844, p. 284 ; Bp. Consp. p. 233 ; Sclater, Contr. Orn. 1851, p. 88.

Procnias (!) *viridis,* Cab. in Tsch. F. P. p. 197.

Chlorophonia viridis, Bp. R. Z. 1851, p. 137 ; Note s. l. Tang. p. 12.

Clare viridis : ciliis oculorum et dorso toto cæruleis : abdomine flavo.

♀. *Clare viridis; cervice postica et uropygio cæruleis: abdomine flavescenti-viridi.*

Long. tota 4·5, alæ 2·5, caudæ 1·4.

Hab. S.E. Brazil (*Temm.*); S. João del Rey and Ypanema (*Natt.*); Eastern Peru (*Tsch.*).

Mus. Brit., Vindob.

2. CHLOROPHONIA LONGIPENNIS.

Euphonia longipennis, DuBus, Bull. Ac. Brux. xxii. p. 156 (1855).

Clare viridis: cervice postica et dorso imo cum ciliis oculorum cæruleis, interscapulio eodem colore lavato: abdomine læte flavo.

♀. *Viridis; uropygio cærulescente: abdomine flavescenti-viridi.*

Long. tota 4·5, alæ 2·55, caudæ 1·2.

Hab. New Grenada, Bogota.

Mus. Dubusi, et P. L. S.

3. CHLOROPHONIA FRONTALIS.

Chlorophonia frontalis, Bp. MS.

Euphonia frontalis, Sclater, Contr. Orn. 1851, p. 89.

Clare viridis: cervice postica et uropygio toto cum ciliis oculorum cæruleis: fronte et abdomine toto flavis.

Long. tota 4·5, alæ 2·7, caudæ 1·5.

Hab. Venezuela, Caraccas (*Levraud*).

Mus. Berol., Paris., Heineano.

4. CHLOROPHONIA OCCIPITALIS.

Euphonia occipitalis, DuBus, Esq. Orn. pl. 14 (♀); Gray, Gen. App. p. 17; Bp. Consp. p. 233; Sclater, Contr. Orn. 1851, p. 90.

Chlorophonia occipitalis, Bp. R. Z. 1851, p. 138; Note s. l. Tang. p. 12; Cassin, Rep. U.S. Astr. Exp. ii. p. 182. pl. xx. fig. 2 (♂).

Clare viridis: semitorque angusto postico et vertice summa cæruleis: vitta pectorali nigro-castanea: abdomine flavissimo, lateribus virescentibus.

♀. *Viridis, macula verticali et semitorque minus conspicua cæruleis: abdomine flavo, lateribus virescentibus.*

Long. tota 5·5, alæ 2·8.

Hab. S. Mexico (*DuBus*).

Mus. Brit., Parisiensi.

5. CHLOROPHONIA PRETRII.

Tanagra (*Euphonia*) *pretrei*, Lafr. R. Z. 1843, p. 97; Mag. de Zool. 1842, Ois. pl. 42.

Euphonia pretrei, Gray, Gen. p. 367. sp. 19; Bp. Consp. p. 233; Sclater, Contr. Orn. 1851, p. 89.

Chlorophonia pretrei, Bp. R. Z. 1851, p. 138; Note s. l. Tang. p. 12.

Euphonia pyrrhophrys, Sclater, Contr. Orn. 1851, p. 89. pl. 75. fig. 2 (♀).

♂. *Clare viridis: pileo cæruleo: fronte angusta et linea super-*

ciliari nigris: fascia uropygiali et abdomine flavissimis: hujus media parte cum crisso castaneis: torque pectorali angusto nigro.
♀. *Viridis: pileo cæruleo: fronte et superciliis castaneis: uropygio et abdomine flavicantibus.*
Long. tota 4·5, alæ 2·7, caudæ 1·6.
Hab. New Grenada, Bogota.
Mus. Brit., &c.

Genus XL. EUPHONIA.

Euphonia, Desm. H. N. des Tang. (1805).
Cyanophonia, Bp. R. Z. 1851, p. 138.
Pyrrhuphonia, Bp. Compt. Rend. xxi. p. 423 (1850).
Ypophæa, Bp. Ann. d. Sc. Nat. 1855.
"*Acroleptes*, Schiff.," Bp. l. c.
Iliolopha, Bp. l. c.

Rostrum breve, altum, dilatatum, culmine incurvo; gonyde ascendente; commissura ad apicem dentata et plerumque serrata: alæ longæ: remigibus 4 primis inter se fere æqualibus sed secunda et tertia plerumque paulo-longioribus: cauda brevi quadrata: sexus dissimiles: ptilosis marium nigra et flava; fœminarum olivacea.

a. *Cyanophonia.*

1. EUPHONIA MUSICA.

L'Organiste, Buff. H. N. iv. p. 290.
L'Organiste de S. Dominge, Buff. Pl. Enl. 809. fig. 1.
Pipra musica, Gm. S. N. 1004.
Tanagra musica, Vieill. Enc. Méth. p. 787.
Euphonia cæruleocephala, Sw. Class. ii. 286.
Euphonia musica, Gray, Gen. p. 367. sp. 1; Bp. Consp. p. 232; Sclater, Contr. Orn. 1851, p. 82.
Euphone musica, Lembeye, Aves de Cuba, p. 42.

Supra nitenti-nigra: pileo cæruleo: fronte aurea, postice nigromarginata: uropygio et abdomine toto fulvo-aurantiis, gula nigra.
Long. tota 4·4, alæ 2·5, caudæ 1·5.
Hab. S. Domingo (*Buff.*, *Sallé*); Cuba (*Lembeye*).
Mus. Brit.

2. EUPHONIA FLAVIFRONS.

Tanagra flavifrons, Lath. Ind. Orn. Suppl. p. 47 (♀); Vieill. Enc. Méth. p. 775.
Emberiza flavifrons, Sparm. Mus. Carls. iv. no. 92 (♀).
Euphone organiste, Desm. Tan. pl. 19 ♂, 20 ♀; Vieill. Gal. Ois. Suppl. pl. s. n. (♂ et ♀).
Cyanophonia musica, Bp. R. Z. 1851, p. 138; Note s. l. Tang. p. 12.
Euphonia sclateri, Bp. in Mus. Paris.
Euphonia flavifrons, Sclater, Tan. Cat. Sp. p. 13 et p. 16.

♂. *Supra nitenti-nigra: pileo cæruleo: fronte aurea postice nigro marginata: uropygio et corpore subtus flavo-aurantiis.*

♀. *Olivaceo-viridis; uropygio et corpore subtus flavescentioribus: gula flavicante: fronte aurea postice angustissime nigro marginata.*

Long. tota 4·2, alæ 2·4, caudæ 1·4.

Hab. Porto Rico (*Maugé*); Trinidad; Cayenne?

Mus. Parisiensi.

This is the species figured by Desmarest and Vieillot as the true *musica*, and considered by me in my Synopsis of this genus, given in the 'Contributions to Ornithology' for 1851, to be that bird in an immature state. But on an examination of Desmarest's types in the Paris Museum, I agree with Prince Bonaparte (who has done me the honour to call this species *E. sclateri*) that it is apparently distinct.

A specimen of the female of this bird in the Derby Museum at Liverpool bears the label "*Tanagra flavifrons*, Latham;" and as Latham's description and Sparman's figure agree sufficiently well with it, and this specimen is probably the type of Latham's description, I feel bound to employ the term *flavifrons* as the first-given appellation of this *Euphonia*.

3. Euphonia nigricollis.

Pipra cyanocephala, Vieill. N. D. d'H. N. xix. p. 165 (♀)?

Tanagra nigricollis, Vieill. N. D. d'H. N. xxxii. p. 412; Enc. Méth. p. 782.

Lindo azul y oro, Azar. Pax. i. p. 390 (unde),

Tanagra aureata, Vieill. Enc. Méth. p. 782.

Tanagra chrysogastra, Cuv. Règn. An. i. p. 366.

Euphonia nigricollis, Lafr. et d'Orb. Syn. Av. in Mag. de Zool. 1837, p. 30; Sclater, Contr. Orn. 1851, p. 83. pl. 75. fig. 1.

Euphonia aureata, d'Orb. Voy. p. 267; Gray, Gen. p. 367. sp. 9; Bp. Consp. p. 233.

Cyanophonia aureata, Bp. R. Z. 1851, p. 138; Note s. l. Tang. p. 13.

Purpurascenti-nigra: pileo cæruleo: fronte et gula nigris: uropygio et abdomine toto aureo-flavis.

♀. *Olivaceo-viridis, subtus flavescens: pileo cæruleo: fronte castanea.*

Long. tota 4·3, alæ 2·6, caudæ 1·5.

Hab. Trinidad; Venezuela, Caraccas (*Levraud*); New Grenada, Bogota; Western Ecuador, vic. of Quito (*Jameson*); Brazil, Rio (*P. Max.*); Paraguay (*Azara*); Rincon de Luna et Corrientes (*d'Orb.*).

Mus. Brit., Paris., &c.

4. Euphonia elegantissima.

Pipra elegantissima, Bp. P. Z. S. 1837, p. 112.

Euphonia cœlestis, Less. R. Z. 1839, p. 42.

Pipra galericulata, Giraud, B. Texas, no. 10. pl. 5. fig. 2 (1840).

Euphonia elegantissima, Gray, Gen. App. p. 17; Bp. Consp. p. 232; DuBus, Esq. Orn. pl. 8; Baird, in Stansbury's Exp. to Utah, p. 330; Sclater, Contr. Orn. 1851, p. 83.

Euphonia tibicen, Licht. in Mus. Berol.

Purpurascenti-nigra: pileo cæruleo: fronte saturate castanea postice nigro marginata: gula nigra: abdomine flavescente-fulvo.

♀. *Olivaceo-viridis, subtus flavescentior: pileo cæruleo: fronte castanea, nigrescente postice marginata.*

Long. tota 4·3, alæ 2·6, caudæ 1·6.

Hab. Guatimala (*Bp.*); S. Mexico, Oaxaca (*DuBus*), Xalapa (*Mus. Berol.*), Cordova (*Sallé*); Texas (*Giraud* and *Baird*).

Mus. Brit., Berolin., &c.

b. *Euphonia.*

5. Euphonia chlorotica.

Tang. cayennensis nigro-lutea, Briss. Orn. iii. 34.

Tang. de Cayenne, Buff. Pl. Enl. 114. fig. 1.

Tanagra chlorotica, Linn. S. N. i. 317; Vieill. Enc. Méth. p. 782.

Tanagra violacea, var. *β. chlorotica*, Gm. S. N. i. 890.

Euphone chlorotique, Desm. Tan. pl. 24, 25.

Euphonia chlorotica, Licht. Verz. Doubl. p. 29; Gray, Gen. p. 367. sp. 5; Bp. Consp. p. 232; Sund. Vet. Ac. Sv. 1833, pl. 10. figs. 2 & 3; Sclater, Cont. Orn. 1851, p. 84; Bp. R. Z. 1851, p. 136, et Note s. l. Tang. p. 10.

Golden Tanager, var. *α*, Lath. G. H. vi. p. 28.

♂. *Atro-nitens; capite, gutture et dorso superiore violaceo-purpurascentibus: pilei dimidio antico usque ad angulum oculi extremum et abdomine toto aureis: macula magna ovali in pogonio interno rectricum duarum utrinque extimarum et alis subtus albis.*

♀. *Olivascens: alis caudaque intus fuscis: subtus flavescens.*

Long. tota 3·4, alæ 2·1, caudæ 1·2.

Hab. Cayenne.

Mus. Brit.

In this *Euphonia* the lores and nasal feathers are black, and the yellow on the head reaches up to a straight line between the farther corners of the eyes.

6. Euphonia serrirostris.

Euphonia serrirostris, Lafr. et d'Orb. Syn. Av. in Mag. de Zool. 1837, p. 30; d'Orb. Voy. p. 267. pl. 23. fig. 2; Gray, Gen. p. 367; Bp. Consp. p. 233; Sclater, Contr. Orn. 1851, p. 90 (♀).

Euphonia chlorotica, Tsch. Av. Consp. in Wiegm. Arch. 1844, p. 284, et F. P. p. 197?

Similis E. chloroticæ *ex Cayenna, sed forsan distincta: major: nucha intensius violacea et rostro magis serrato: hujus basi quoque albescente.*

Long. tota 4·4, alæ 2·25, caudæ 1·5.

♀. (E. SERRIROSTRIS, Lafr. et d'Orb. !) *Supra flavo-olivacea: subtus flavescentior: pectore et ventre mediis cinerascentibus.*

Hab. Bolivia, Guarayos (*d'Orb.*); Eastern Peru (*Tsch.*)?

Mus. Lafresnayano, Brit.

The *Euphonia serrirostris* figured by d'Orbigny seems to be nothing more than the female of a species very closely allied to the *Euphonia chlorotica*. As however I think it possibly distinct from the *E. chlorotica* of Cayenne, MM. Lafresnaye and d'Orbigny's name can be retained for the Bolivian bird, until further examination of a series of specimens can be made—by which means only the question of their identity can be determined.

7. EUPHONIA TRINITATIS.

Euphonia trinitatis, Strickl. Cont. Orn. 1851, p. 72; Sclater, Cont. Orn. 1851, p. 84.

♂. *Atro-nitens sed magis viridescens quam* E. chlorotica: *capite et gutture purpureo tinctis: fronte angusta nigra: pileo supero toto postice rotundato et abdomine aureis: macula magna ovali in pogonio interno rectricum duarum utrinque extimarum et alis subtus albis.*

♀. *Supra olivascens: subtus flava.*

Long. tota 3·9, alæ 2·2, caudæ 1·3.

Hab. Trinidad.

Mus. P. L. S.

I have seen a good many examples of this Trinidad species, which appears correctly separable from the Cayenne bird.

8. EUPHONIA AFFINIS.

Tanagra (*Euphonia*) *affinis*, Less. R. Z. 1842, p. 175.

Euphonia affinis, Gray, Gen. p. 367. sp. 20; Bp. Consp. p. 233.

♂. *Atro-nitens: capite et gutture purpureo tinctis: fronte angusta nigra: pilei dimidio antico usque ad angulum oculorum extremum et abdomine toto limonaceo-flavis: macula magna in pogonio externo rectricum duarum utrinque extimarum et alis subtus albis.*

♀. *Supra olivascens, pileo postico et dorso superiore cinereo tinctis: subtus flavescentior, abdomine medio clariore.*

Long. tota 3·0, alæ 2·1, caudæ 1·3.

Hab. S. Mexico, Orizaba (*Botteri*); Guatimala; Realejo, Central America (*Less.*).

Mus. P. L. S.

In the amount of yellow on the head, and general appearance, this species comes very near the true *chlorotica*. But it may be recognized by the paler tinge of the yellow and the absence of the violaceous colouring upon the back.

9. EUPHONIA MINUTA.

Euphonia olivacea, Desm. Tan. pl. 27; Gray, Gen. p. 367. sp. 2; Bp. Consp. p. 232 (♀)?

Tanagra olivacea, Vieill. Enc. Méth. p. 782.

Euphonia minuta, Cab. in Schomb. Reise, iii. p. 671; Sclater, Tan. Cat. Sp. p. 14 (♀).

Euphonia strictifrons, Strickl. Contr. Orn. 1851, p. 72; Sclater, Contr. Orn. 1851, p. 84.

Euphonia pumila, Bp. R. Z. 1851, p. 136; Note s. l. Tang. p. 10.

Euphonia leucopyga, Natt. in Mus. Vindob.

Atro-nitens; dorso viridescentiore, capite et gutture purpurascentioribus: fronte lata et abdomine aureis: crisso, tibiis et rectricum trium utrinque extimarum pogonio interno fere toto cum tectricibus alarum inferioribus albis.

♀. *Supra olivacea: subtus flavescens, abdomine medio grisescente.*

Long. tota 3·4, alæ 1·9, caudæ 1·0.

Hab. Cayenne; Brit. Guiana (*Schomb.*); Barra do Rio Negro (*Natt.*); New Grenada, Bogota.

Mus. Brit., Vindob.

This species is very easily distinguished among its close affines by the narrow yellow head-band and white crissum.

I have seen the type of Cabanis' *E. minuta*, and have no doubt it is the female of this bird, the male of which was afterwards named by Prince Bonaparte and Mr. Strickland almost simultaneously.

I have little doubt that Desmarest's *Euphonia olivacea* is also the female of this bird, but the name is hardly sufficiently applicable to warrant its adoption.

10. EUPHONIA CONCINNA.

Euphonia concinna, Sclater, P. Z. S. 1854, p. 98. pl. 85. fig. 2, et 1855, p. 159; Tan. Cat. Sp. App. p. 16.

Euphonia hirundinacea, Bp. R. Z. 1851, p. 156; Note s. l. Tang. p. 10?

Supra nigro-violacea: vertice summa flava, fronte et linea supra oculos nigris: gutture violaceo-nigro: abdomine aurantiaco: cauda subtus immaculate nigra.

Long. tota 3·8, alæ 2·2, caudæ 1·4.

Hab. New Grenada, Bogota.

Mus. P. L. S.

11. EUPHONIA XANTHOGASTRA.

Euphonia xanthogastra, Sund. Vet. Ac. Handl. 1833, pl. 10. fig. 1; Gray, Gen. p. 367. sp. 22; Bp. Consp. p. 233; Sclater, Contr. Orn. 1851, p. 85; P. Z. S. 1854, p. 115, et 1855, p. 159.

Euphonia brevirostris, Bp. R. Z. 1851, p. 156, et Note s. l. Tang. p. 10.

Nitente-cærulescenti-nigra, cervice postica violacea: gutture nigro: pileo supero toto postice rotundato cum fronte et narium plumis et abdomine aurantiaco-flavis: macula in rectricis unæ utrinque extimæ pogonio interno et tectricibus subalaribus albis.

Long. tota 4·0, alæ 2·4, caudæ 1·3.

Hab. Southern Brazil; Ecuador, prov. Quixos; New Grenada, Bogota.

Mus. Brit.

I can find no difference between the Brazilian bird and the Bogota specimens (*E. brevirostris*) sufficient to warrant their separation.

12. EUPHONIA RUFICEPS.

Euphonia ruficeps, Lafr. et d'Orb. Syn. Av. in Mag. de Zool. 1837, p. 30; d'Orb. Voy. p. 268. pl. 22. fig. 2; Gray, Gen. p. 367. sp. 18; Bp. Consp. p. 232; R. Z. 1851, p. 136; Note s. l. Tang. p. 10; Sclater, Contr. Orn. 1851, p. 85.

Nitenti-cærulescenti-niger, cervice postica intense violacea: gutture nigro: pileo summo cum fronte castaneis: abdomine aureo medialiter aurantiaco: macula in pogonio externo rectricis unæ utrinque extimæ et tectricibus subalaribus albis.

Long. tota 4·0, alæ 2·4, caudæ 1·2.

Hab. Bolivia, Yuracares (*d'Orb.*); Venezuela, Caraccas (*Levraud*).

Mus. Parisiensi, Lafresnayano, Derbiano.

A bird in the collection lately transmitted to the Paris Museum by M. Levraud from Caraccas, differs from the true Bolivian *ruficeps* only in having rather more chestnut colouring on the head, and that of a lighter and more orange-coloured tinge. I should be unwilling to separate it specifically without seeing more specimens.

13. EUPHONIA FULVICRISSA, sp. nov.

Supra nitenti-æneo-nigra, pileo postice rotundato flavo: gutture toto cum cervice versus ventrem in semicirculum terminata æneo-nigris: abdomine aureo, medialiter aurantiaco: crisso fulvo: rectricis unæ utrinque extimæ macula in pogonio externo et tectricibus subalaribus albis; his flavescente tinctis.

Long. tota 3·7, alæ 2·0, caudæ 1·2.

Hab. S. Martha in New Grenada.

I possess a single specimen of this *Euphonia* which was received by MM. Verreaux from their collector at S. Martha. It appears to me to constitute a new species of this genus, distinguished by the way in which the black throat is produced towards the breast and rounded at its termination, and the peculiar colour of the crissum.

14. EUPHONIA CHALYBEA.

Tanagra chalybea, Mikan, Faun. et Flor. Bras. pl. 3. fig. 1 ♂, 2 ♀.

Euphone ænea, Sund. Vet. Ac. Sv. 1834, p. 309. pl. 11. fig. 4; Less. Descr. d. Mamm. et Ois. p. 348.

Euphonia ænea, Gray, Gen. p. 367. sp. 21; Bp. Consp. p. 233; R. Z. 1851, p. 136; Note s. l. Tang. p. 11.

Euphonia pardalates, Less. Echo d. M. S. 1844.

Euphonia chalybea, Sclater, Contr. Orn. 1851, p. 85.

"*Euphonia pyrrhuloides*, Natt.," Gray, Gen. App. p. 16.

Euphonia chloritica, Licht. in Mus. Berol.

Corpore supero cum gula summa intense æneis: vitta frontali et abdomine toto flavis, rostro crasso.

♀. *Olivacea: subtus grisea, lateribus et ventre imo crissoque flavescenti-olivaceis.*

Long. tota 5·0, alæ 2·6, caudæ 1·6.

Hab. Southern Brazil, Rio Grande do Sul (*Plant*).

Mus. Brit., Paris.

15. EUPHONIA VIOLACEA.

Tang. brasiliensis nigro-lutea, Briss. Orn. iii. p. 31.

Tanagra violacea, Linn. S. N. p. 315; Vieill. Enc. Méth. p. 783; Max. Beitr. iii. p. 441.

Tang. de Brésil, Buff. Pl. Enl. 114. fig. 2.

Le Teité, Buff. H. N. iv. 295 (partim).

Euphonia violacea, Gray, Gen. p. 267. sp. 3; Schomb. Reise, iii. 671; Bp. Consp. p. 232; Sclater, Contr. Orn. 1851, p. 86; Bp. R. Z. 1851, p. 136; Note s. l. Tang. p. 10.

Euphone teité, Desm. Tan. pl. 21. 22. 23 (?).

Golden Tanager, Lath. G. H. vi. 27.

Nitenti-cæruleo-nigra; cervice postica violaceo tincta: fronte tota et pileo antico a mediis oculis cum corpore subtus aureis; rect. 2 *aut* 3 *extimis in pogonio interno albo maculatis.*

♀. *Olivacea, subtus dilutior, medialiter flavescens.*

Long. tota 4·0, alæ 2·3, caudæ 1·3.

Hab. Trinidad; Cayenne; Brit. Guiana (*Schomb.*); South-eastern Brazil (*P. Max.*); Southern Brazil.

Mus. Brit., &c.

16. EUPHONIA LANIIROSTRIS.

Euphonia laniirostris, Lafr. et d'Orb. Syn. Av. in Mag. de Zool. 1837, p. 30; d'Orb. Voy. p. 266. pl. 23. fig. 1; Gray, Gen. p. 367. sp. 17; Bp. Consp. p. 223; Rev. Zool. 1851, p. 136; Note s. l. Tang. p. 10.

Major: nigro-violaceo-nitens: pileo summo postice rotundato et corpore subtus aureo-flavis: rostro maximo, crassissimo.

♀. *Viridescenti-olivacea, uropygio flavescentiore: subtus flavescenti-viridescens.*

Hab. Bolivia, prov. Yungas Guarayos and S. Cruz de la Sierra (*d'Orb.*).

Mus. Parisiensi, Lafresnayano.

17. EUPHONIA CRASSIROSTRIS, sp. nov.

Euphonia fortirostris, Lafr. in Mus. suo?

Nitenti-cæruleo-nigra, nucha vix violaceo tincta: pileo summo postice rotundato flavo: linea angusta supra oculos et narium plumis nigris: subtus læte flava: rectricum duarum utrinque extimarum macula longa in pogonio interno et tectricibus subalaribus albis: rostro forti, crasso.

♀. *Olivacea, subtus flava, lateribus olivascentibus.*

Long. tota 4·1, alæ 2·6, caudæ 1·6.

Hab. New Grenada, Bogota.

I had formerly thought this Bogota bird might be the same as the Central American *E. hirundinacea*, but I have lately obtained other specimens, and find that such is not the case. The upper colouring of this bird is not of the peculiar green shade which exists in the true *hirundinacea*, and the yellow head, instead of being confined to the frontal half and terminated by a straight line, extends further back and is posteriorly rounded. The bill of this bird is also thicker, broader and stronger, and shows more approach to the true Bolivian *laniirostris*.

I am not now certain whether it is this species or the *hirundinacea* to which the Baron de la Fresnaye has given the MS. name *fortirostris*.

18. EUPHONIA HIRUNDINACEA.

Euphonia hirundinacea, Bp. P. Z. S. 1837, p. 117; Gray, Gen. p. 367. sp. 4; Bp. Consp. p. 232; Sclater, P. Z. S. 1854, p. 98. pl. 85. fig. 1 (*fig. mala*).

Euphonia laniirostris, Sclater, Contr. Orn. 1851, p. 86.

Viridescenti-æneo-nigra, cervice postica cærulescentiore: pileo a fronte ad initium oculorum et corpore subtus flavis, macula in ventre imo alba: rectricum duarum utrinque extimarum macula oblonga in pogonio interno et tectricibus subalaribus albis.

Long. tota 4·2, alæ 2·5, caudæ 1·3.

Hab. Guatimala (*Bp.* et *Constancia*); S. Mexico, Cordova (*Sallé*).

I had not very good specimens of this bird when I described it in P. Z. S. for 1854, and the figure there given would suit better my *Euphonia crassirostris*. M. Sallé, however, has lately brought some beautifully prepared skins from Southern Mexico, which have enabled me to determine the species more satisfactorily.

I have seen specimens in which the white belly-spot, which is perhaps produced by abrasion of the feathers in the most adult birds, was scarcely apparent.

19. EUPHONIA MELANURA.

Euphonia melanura, Sclater, Contr. Orn. 1851, p. 86; P. Z. S. 1855, p. 159.

Nitenti-violaceo-nigra: pileo summo cum fronte et corpore subtus aureis: rectricibus immaculate nigris.

Long. tota 4·0, alæ 2·3, caudæ 1·3.

Hab. Barra do Rio Negro (*Wallace*); New Grenada, Bogota?

The Bogota birds have the bill rather stronger and the yellow on the head more extended than the specimens from the Amazons.

c. *Iliolopha.*

20. EUPHONIA CAYANA.

Tang. cayanensis nigra, Briss. Orn. iii. 219.
Tang. de Cayenne, Buff. Pl. Enl. 114. fig. 3.
Tang. négre, Buff. H. N. iv. 297.

Tanagra cayana, Linn. S. N. i. p. 14.
Tanagra cayennensis, Gm. S. N. ii. 894.
Euphonia cayennensis, Gray, Gen. p. 367. sp. 6; Schomb. Reise, iii. 671.
Euphonia cayana, Bp. Consp. p. 233; R. Z. 1851, p. 135; Note s. l. Tang. p. 10; Sclater, Contr. Orn. 1851, p. 88.
Euphone nègre, Desm. Tan. pl. 26.

Atro-violaceo-nitens: macula magna utrinque pectorali læte flava.
Long. tota 4·0, alæ 2·5, caudæ 1·3.
Hab. Cayenne; Brit. Guiana (*Schomb.*); Lower Amazon (*Wallace*).

21. EUPHONIA RUFIVENTRIS.

Tanagra rufiventris, Vieill. N. D. d'H. N. xxxii. p. 426; Enc. Méth. p. 781; Gal. Ois. Supp. pl. 24.
Euphonia rufiventris, Gray, Gen. p. 367. sp. 12; Bp. Consp. p. 233; R. Z. 1851, p. 135; Note s. l. Tang. p. 10; Sclater, Contr. Orn. 1851, p. 87; Cassin, Rep. U.S. Astr. Exp. ii. p. 182. pl. xx. fig. 1.
Euphonia bicolor, Strickl. Contr. Orn. 1850, p. 48. pl. 49. fig. 2.
"*Tanagra chrysogaster,* Cuv.," Less. Tr. d'Orn. p. 461.

Atro-nitens: abdomine toto rubrescenti-aurantio, lateraliter flavescentiore.
♀. *Olivaceo-viridis; subtus medialiter cinerea, lateraliter flavescenti-olivacea.*
Long. tota 4·5, alæ 2·4, caudæ 1·4.
Hab. Eastern Peru, prov. Maynas (*Pöppig*); r. Ucayali (*Hawxwell*); Rio Negro, Barcellos et S. Carlos (*Natterer*).
Mus. Brit., Derbiano, Vindob. et Lipsiensi.

22. EUPHONIA PECTORALIS.

Pipra pectoralis, Lath. Ind. Orn. Supp. p. 57.
Euphonia castaneiventris, Vieill. Gal. Ois. Supp. pl. .
Tanagra rufiventris, Licht. Doubl. p. 30; Max. Beitr. iii. 447.
Tanagra chlorocyanea, Vieill. N. D. d'H. N. xxxii. p. 427; Puch. Arch. Mus. vii. p. 355.
Euphonia pectoralis, Gray, Gen. p. 367. sp. 7; Bp. Consp. p. 233; R. Z. 1851, p. 135; Note s. l. Tang. p. 10; Sclater, Cont. Orn. 1851, p. 87.
Euphonia umbilicalis, Less. Tr. d'Orn. p. (♀); Bp. Consp. p. 233; R. Z. 1851, p. 400, et Note s. l. Tang. p. 11.

Atro-violaceo-nitens: plaga utrinque pectorali flava: ventre toto saturate castaneo: tectricibus subalaribus albis.
♀. *Olivacea: pileo postico griseo: subtus flavo-olivacea: pectore et cervice cinereis: crisso castaneo.*
Long. tota 4·0, alæ 2·5, caudæ 1·5.
Hab. S.E. Brazil (*Max.*); Goyaz (*Cast.* et *Dev.*).
Mus. Brit., Parisiensi.

d. *Pyrrhuphonia.*

23. EUPHONIA JAMAICENSIS.

Fringilla jamaicensis, Briss. Orn. iii. 166.
Grey Grosbeak, Brown, Illustr. pl. 26.
Fringilla jamaica, Linn. S. N. i. p. 323.
Euphonia jamaica, Gray, Gen. App. p. 17; Gosse, B. Jam. p. 238; Ill. Orn. Jam. pl. 59 ♂ et ♀; Bp. Consp. p. 233; Sclater, Contr. Orn. 1851, p. 91.
Pyrrhuphonia jamaica, Bp. R. Z. 1851, p. 157; Note s. l. Tang. p. 11.
Euphonia cinerea, Lafr. R. Z. 1846, p. 277; Bp. Consp. p. 235; Gray, Gen. App. p. 17.
Banana Finch, Lath. G. H. vi. 125.

Cærulescenti-grisea: subtus dilutior, ventre flavo, crisso albido.
♀. *Mari similis, sed uropygio virescente, ventre non flavo.*
Long. tota 4·3, alæ 2·5, caudæ 1·5.
Hab. Jamaica (*Gosse*).
Mus. Brit.

24. EUPHONIA PLUMBEA.

Euphonia poliocephala, Natt. in Mus. Vindob.
Euphonia plumbea, DuBus, Bull. Acad. Brux. xxii. p. 156.

Griseo-plumbea, viridi micans: ventre et crisso flavissimis.
♀. *Grisea, olivaceo tincta: gula grisea: ventre flavescentiore: crassitie* E. minutæ.
Hab. Rio Negro (*Natt.*).
Mus. Vindob.

There are specimens of both sexes of this somewhat abnormally coloured *Euphonia* in the Vienna Museum, collected by Natterer on the Rio Negro, and numbered 967 in his collection.

GENERUM TANAGRINORUM

DISTRIBUTIONIS GEOGRAPHICÆ

SCHEMA.

	North America. 1.	Mexico and Central America. 2.	Antilles. 3.	New Grenada (Bogota). 4.	Transandean Ecuador (Quito). 5.	Eastern Peru. 6.	Western Littoral of Peru. 7.	Interior of Bolivia. 8.	Paraguay, Uruguay & S. Brazil. 9.	Littoral of Brazil. 10.	Guiana and Cayenne. 11.	Venezuela and Littoral of New Grenada. 12.	Trinidad. 13.	Total number of Species.
1. Pitylus...............	...	2	...	1	...	1	...	...	...	2	3	...	...	7
2. Orchesticus.........	...	...	...	1	...	1	...	1	1	3	1	1	1	3
3. Schistochlamys ...	...	...	...	...	...	1	...	...	...	1	...	...	...	2
4. Saltator	...	3	2	3	...	2	...	5	6	4	2	2	3	21
5. Psittospiza	...	...	...	1	1	1	...	...	...	...	...	...	...	1
6. Lamprospiza	...	...	...	...	...	...	...	...	...	...	1	...	...	1
7. Cissopis	...	...	...	1	...	1	...	1	1	1	1	...	...	3
8. Oreothraupis	...	...	...	...	1	...	...	...	...	...	...	...	...	1
9. Arremon	...	1	...	2	1	1	...	1	2	3	1	1	...	12
10. Phœnicophilus ...	...	...	1	...	...	...	...	...	...	...	...	...	...	1
11. Buarremon	...	3	...	6	2	2	...	3	...	...	1	3	...	17
12. Chlorospingus......	...	2	...	11	...	...	...	1	...	...	...	1	1	15
13. Pyrrhocoma	...	...	...	...	...	...	...	...	1	...	...	...	...	1
14. Nemosia	...	...	...	2	...	3	...	3	2	4	3	2	1	11
15. Cypsnagra	...	...	...	...	...	...	...	1	...	1	...	...	...	1
16. Tachyphonus	...	...	...	5	...	4	...	1	2	2	3	2	2	10
17. Trichothraupis ...	...	...	...	...	...	...	...	...	1	1	...	...	...	1
18. Eucometis	...	...	...	...	...	...	...	1	...	...	1	1	...	3
19. Lanio	...	1	...	1	...	...	...	1	...	...	1	...	...	3
20. Phœnicothraupis...	...	1	...	1	...	...	...	1	1	1	...	1	1	4
21. Lamprotes	...	...	...	1	...	...	...	...	...	1	...	...	...	2
22. Orthogonys.........	...	...	...	...	...	...	...	...	...	1	1	...	...	2
23. Pyranga	3	7	2	4	...	2	...	1	1	1	1	2	1	10
24. Ramphocelus	...	4	...	5	...	3	...	1	...	3	1	2	1	16
25. Spindalis............	...	...	3	...	...	...	...	...	...	...	...	...	...	3
26. Tanagra	...	2	...	4	1	3	2	4	2	4	3	3	2	13
27. Dubusia	...	...	...	1	1	...	...	...	...	...	...	...	...	2
28. Compsocoma	...	...	...	1	2	1	...	1	...	...	...	...	...	4
29. Buthraupis	...	...	...	2	2	...	...	1	...	...	...	...	...	4
30. Pœcilothraupis ...	...	...	...	2	1	...	1	1	...	...	...	...	...	3
31. Iridornis	...	...	...	1	1	...	1	...	...	...	...	...	...	3
32. Calliste	...	3	...	17	6	12	...	7	3	9	7	8	3	51
33. Diva	...	...	...	1	...	...	...	...	...	...	...	...	...	1
34. Pipridea	...	...	...	...	...	...	...	1	1	1	...	1	...	3
35. Chlorochrysa	...	...	...	1	2	1	...	...	...	...	...	...	...	2
36. Tanagrella	...	...	...	1	...	1	...	...	...	1	1	1	...	4
37. Glossiptila	...	...	1	...	...	...	...	...	...	...	...	...	...	1
38. Chlorophonia	...	1	...	2	...	1	...	...	...	1	...	1	...	5
39. Euphonia	...	3	3	6	1	4	...	3	1	4	5	3	3	24
40. Stephanophorus...	...	...	...	...	...	...	...	...	...	1	...	...	...	1
	3	33	12	84	22	45	4	40	25	50	37	35	19	272

6. On the species of the American genus Parra. By Philip Lutley Sclater, M.A., F.Z.S.

The American birds of the genus *Parra*, together with their representatives in the Tropics of the Old World belonging to the genera *Metopidius*, *Hydralector* and *Hydrophasianus*, constitute a very natural group, allied in many respects to the *Rallidæ*, but remarkable for the extreme elongation of the toes—a formation beautifully adapted for enabling them to walk upon the floating leaves of the numerous water-plants of these countries.

MM. Verreaux of Paris have kindly furnished me from their well-stored magazines with a series of specimens of *Parra*, which enabled me to point out to the Society the distinctions between all the hitherto known species of this genus, and to indicate one certainly new, and a second, which although not so obviously distinct, has some claim to be recognized as an intermediate species.

A. *Species caruncula frontali bilobata et caruncula rictali utrinque præditæ.*

1. Parra jacana.

Parra jacana et variabilis, Linn. et Gm.
Parra nigra et brasiliensis, Gm.
Parra jacana, Max. Beitr. iv. 786.
Parra jassana, Schomb. Reise, iii. 759.
Jacana du Mexique, Buff. Pl. Enl. 322 (adult).
Jacana du Brésil, Buff. Pl. Enl. 846 (juv.).

Capite toto cum cervice supera et corpore infra nigris: dorso, alis caudaque clare castaneis: tectricibus caudæ superioribus purpurascente tinctis: remigibus flavescenti-viridibus, nigro extus partim marginatis: hypochondriis et tectricibus subalaribus intense castaneis.

Hab. South-eastern Brazil (*P. Max.*); British Guiana (*Schomb.*); Cayenne; ins. Trinidad.

The examples of this bird which I have seen from Guiana and Cayenne appear to be considerably inferior in size to the Brazilian specimen, but I am not yet certain how far this may be due to sexual differences.

2. Parra intermedia, sp. nov.?

"*Parra intermedia*, Bp.," J. et E. Verreaux, MS.

Capite toto cum cervice supera et corpore infra nigris: dorso, alis caudaque obscurius castaneis, purpurascente paululum tinctis: hypochondriis et tectricibus subalaribus brunnescenti-castaneis: remigibus flavescenti-viridibus, nigro extus partim marginatis.

Hab. Venezuela (*Verreaux*).

This bird is hardly distinguishable from the *P. jacana*, except by the browner and more purplish tinge of the back, in which respect it seems intermediate between that species and *P. melanopygia*.

I should hardly have ventured to separate it specifically on my own authority; but, as the MS. name has attained circulation, I think it right to point out the apparent differences.

3. Parra melanopygia, sp. nov.

Capite toto cum cervice supera et corpore infra nigris: interscapulio, alis caudaque purpurascenti-brunneis: dorso imo et tectricibus caudæ superioribus nigris: hypochondriis et tectricibus subalaribus nigris: remigibus flavescenti-viridibus, nigro extus partim marginatis.

Hab. S. Martha in New Grenada (*Verreaux*).

MM. Verreaux's specimens of this bird are labelled *P. hypomelæna*, but that name is properly applicable to the next species.

4. Parra hypomelæna.

Parra hypomelæna, Gray & Mitch. Gen. of B. pl. 159.

Nigra: alis fusco-nigris purpurascente tinctis: remigibus flavescenti-viridibus, nigro extus partim marginatis.

Hab. New Grenada, S. Martha (*Verreaux*); Bogota (*Mus. Brit.*); Cartagena (*Mus. Paris.*); Chiriqui, Panama (*Bridges*).

B. *Species caruncula frontali trilobata: carunculis rictalibus nullis.*

5. Parra gymnostoma.

Parra gymnostoma, Wagl. Isis, 1831, p. 517.

Parra cordifera, Less. R. Z. 1842, p. 135; Desmurs, Icon. Orn. pl. 42.

Capite toto cum cervice supera et infra ad medium pectus nigris, æneo micantibus: dorso toto alisque castaneis: uropygio purpurascente: abdomine purpurascenti-brunneo: remigibus flavescenti-viridibus, nigro marginatis.

Hab. Southern Mexico; Mazatlan (*Mus. Brit.*); Acapulco (*A. Lesson*); New Grenada, S. Martha (*Verreaux*); Honduras (*Dyson*).

Wagler's accurate diagnosis of this bird has been generally passed over, and Lesson's more recent appellation is generally employed for this species.

7. CATALOGUE OF THE BIRDS COLLECTED BY M. AUGUSTE SALLÉ IN SOUTHERN MEXICO, WITH DESCRIPTIONS OF NEW SPECIES. BY PHILIP LUTLEY SCLATER, M.A., F.Z.S., ETC.

(Aves, Pl. CXX., CXXI.)

M. Auguste Sallé, one of the most active and successful of the present generation of travelling Naturalists—on his recent return to Europe from Southern Mexico, brought with him a very fine collection of birds obtained principally near the town of Cordova in the State of Vera Cruz, and partially also in the vicinity of the peak of

Orizaba in the State of La Puebla. When in Paris a short time since, I had the pleasure of looking through this collection in company with Prince Charles Lucien Bonaparte; and at his request, and that of M. Sallé, who offered to place a series of the birds in my hands for that purpose, agreed to endeavour to make a complete catalogue of the species. Although I have not been able to devote all the time I could have wished to this object, I have succeeded in ascertaining, without much doubt, the names of the greater part of the known species; while there are fourteen or fifteen birds in the collection which may be considered as probably unknown to science, and for which I have accordingly proposed new specific appellations. It is quite likely that some of these may have been already named by the American Naturalists, who have recently done so much to extend our knowledge of the Fauna of the northern portion of the New World; but I have been unable to find any notice of them in the publications of the Scientific Societies of the United States or other works, as far as they have been received in this country up to the present time.

Although we have a pretty good general knowledge of Mexican Ornithology—many collections having been made in that country—there has been, as far as I am aware, no attempt made to form any detailed account of the birds inhabiting it, except Mr. Swainson's imperfect Synopsis published in the Philosophical Magazine in 1827, and Wagler's paper on Mexican Animals in the Isis for 1831; and the notices of more recently discovered species are scattered at random through the scientific publications of England, France, Germany and America, to the great perplexity of the naturalist. So I may hope that the present list of 233 species found by M. Sallé in Southern Mexico, will be of some use as an Index to the Ornithology of that country as far as it goes, and form a foundation on which a more perfect work on the same subject may some day be raised.

I may remark, that there are examples of many well-known South American forms in the present collection (such as *Nyctidromus*, *Pipra*, *Anabates* and *Formicarius*) which have not hitherto been noticed so far north; the zoology of the hot eastern sea-board, which M. Sallé explored, being, as might have been expected, much more tropical in its character than that of the high table-land of the interior, whence most Mexican collections have hitherto been brought.

The occurrence of the examples of the purely Boreal types *Certhia* and *Parus* so far south (below the parallel of 19′ N. L.), is also, I believe, hitherto unrecorded.

A notice of these collections of birds by Prince Bonaparte will be found in the Comptes Rendus of the French Academy of Natural Sciences for the month of May of this year, and some of the new species are there shortly indicated.

ACCIPITRES.

1. TINNUNCULUS SPARVERIUS (Linn.).

Sallé, no. 8. Cordova.

2. Hypotriorchis femoralis (Temm.).—Pl. Col. 121 et 343.
Sallé, no. 11. Vera Cruz. *Hypotriorchis aurantius*, Heerman, Pr. Ac. Phil. vii. 177. Observed by Dr. Heerman in New Mexico.

3. Asturina magnirostris (Gm.).
Sallé, no. 5.

4. Micrastur concentricus (Less.).
Sallé, no. 7.

5. Geranospiza gracilis (Temm.).
Sallé, no. 9. Cordova.

6. Ictinia plumbea (Gm.).
Sallé, no. 6. Cordova.

7. Buteo insignatus, Cassin, B. Cal. pp. 102 et 198. pl. 31.
Sallé, no. 7.

Both Prince Bonaparte and M. Jules Verreaux (who are well acquainted with *Accipitres*) agree in considering a single specimen obtained by M. Sallé as referable to this curious species. It appears to agree sufficiently with Mr. Cassin's description and figure of the male bird of *B. insignatus*.

8. Syrnium virgatum, Cassin, Pr. Ac. Sc. Phil. 18. iv. p. 124; Journ. Ac. Phil. iv. pl. ii. pl. 3.—*Syrnium squamulatum*, Bp. Consp. p. 53.—*Syrnium zonocercus*, G. R. Gray, List Accipitr. p. 103.—*Macabra squamulata*, Bp. MS.
Sallé, no. 3. Cordova.

9. Athene infuscata (Temm.), Strickl. Orn. Syn. p. 163.
Sallé, no. 4. Cordova. These examples seem to agree with South American specimens.

CAPRIMULGIDÆ.

10. Nyctidromus americanus (Linn.), Cassin, Pr. Ac. Sc. Phil. v. 180.—*N. derbianus*, Gould.

Does not seem different from South American examples.
Sallé, no. 10, ♂ et ♀. Cordova.

HIRUNDINIDÆ.

11. Cotyle serripennis (Aud.).—*Hirundo serripennis*, Aud. Orn. Biog. iv. p. 593: B. Am. 8vo. i. pl. 51.
Sallé, no. 137, ♂ et ♀. Cordova.

MOMOTIDÆ.

12. Momotus lessoni (Less.).—*M. brasiliensis*, Cassin, Pr. Ac. Phil. iv. 89?
Sallé, no. 48. Cordova.

The specimens of this northern representative of *M. brasiliensis* show some variation. M. Sallé's example has a smaller bill, less black on the head, and less rufous tinge on the breast than a Guatimalan bird, which I refer to the same species.

ALCEDINIDÆ.

13. CERYLE AMERICANA (Gm.), Cassin, B. Cal. i. p. 255; P. Z. S. 1855, p. 136.

Sallé, no. 68. Cordova.

TROGONIDÆ.

14. TROGON CALIGATUS, Gould, Mon. Trogon. pl. 7.

Sallé, no. 71, ♂ et ♀. Cordova.

15. TROGON PUELLA, Gould, P. Z. S. 1845, p. 18.—*Trogon xalapensis*, DuBus, Esq. Orn. pl. 5.

Sallé, no. 69. Cordova, ♂ et ♀.

16. TROGON AURANTIIVENTRIS, Gould, P. Z. S. 1856 (May 13th), p. 107.—*Trogon sallæi*, Bp. Compt. Rend. May 1856.

Sallé, no. 70. Cordova.

CÆREBIDÆ.

17. CÆREBA CYANEA (Linn.), v. P. Z. S. 1856, p. 140.

Sallé, no. 113. Cordova. Seems to agree quite sufficiently with South American species.

18. CERTHIOLA MEXICANA, sp. nov.?

Nigricanti-fusca : capite, alis caudaque nigris : superciliis et speculo alari albis : uropygio flavicante : gutture cinereo : abdomine flavo ; crisso albidiore : rectricibus extimis albo terminatis.

Long. tota 3·8, alæ 2·1, caudæ 1·2.

Sallé, no. 114. Some of the various local races of *Certhiola flaveola* certainly show such differences as entitle them to specific separation. The present bird does not appear to be quite the same as any of the nine given by Prince Bonaparte in his 'Notes Orn.' p. 51. It is very closely allied to the Bogota species, which I believe to be the *C. luteola*, Cab., but may be distinguished by its duller back, less brightly-coloured uropygium and belly, longer bill and shorter wings.

19. DIGLOSSA BARITULA, Wagl. Isis, 1832, p. 281; Gray, Gen. B. pl. 42.

Sallé, no. 116, ♂ et ♀.

TROCHILIDÆ.

I have not myself examined M. Sallé's collection of *Trochilidæ*, but he has kindly furnished me with the names of twenty-five species, which he obtained, as determined by himself and M. Bourcier.

20. Phaethornis adolphi.—*Pygmornis adolphi*, Sallé, MS. Mr. Gould will shortly publish a figure of this new species.

21. Lampornis prevosti (Bourc. & Muls.), R. Z. 1843, p. 99.

22. Campylopterus pampa (Less.), Ois. Mouch. Suppl. pl. 15; Bp. Consp. p. 71; Gould, Mon. Trochil. x. pl. 11.

23. Campylopterus delattrii (Less.), R. Z. 1839, p. 14; Gould, Mon. Trochil. x. pl. 10.

24. Colibris thalassina (Sw.), Phil. Mag. 1827, p. 441; Bp. Consp. p. 69; Gould, Mon. Trochil. v. pl. 5.

25. Heliomaster constantii (Delattre), Gould, Mon. Trochil. v. pl. 10.

26. Cœligena fulgens (Sw.), Phil. Mag. 1827, p. 341.—*Orn. rivolii*, Less.

27. Myiabeillia typica, Bp.; Gould, Mon. Trochil. viii. pl. 7.

28. Delattria henrici (Less.), Bp. Consp. p. 70; Gould, Mon. Trochil. viii. pl. 14.

29. Delattria rhami (Less.), R. Z. 1838, p. 315.

30. Delattria clemenciæ (Less.), Gould, Mon. Trochil. ix. pl. 10.

31. Cyanomyia quadricolor (Vieill.), Gould, Mon. Trochil. ix. pl. 9.

32. Amazilius arsinoe (Less.), Bp. Consp. p. 77.

33. Amazilius dubusi (Bourc.), 1852, ubi?
Is this species really distinct from *A. riefferi* (Bourc.), R. Z. 1843, p. 103? I cannot see any difference in Mr. Gould's examples of these two species.

34. Amazilius cerviniventris, Gould, P. Z. S. 1856, June 10th.

35. Sporadinus caniveti (Less.), Colibris, Suppl. pl. 37.
Perhaps this may be *S. auriceps*, Gould (Cont. Orn. 1852, p. 137), which appears to be the Mexican representative of *S. caniveti*.

36. Thaumatias candidus, Bourc. Ann. Sc. Lyons, 1846; Bp. Consp. p. 78.

37. Basilinna leucotis (Vieill.).—*Orn. arsenii*, Less. Ois. Mouch. pl. 9, Suppl. pl. 27.

38. Trochilus colubris, Linn.

39. Selasphorus platycercus (Sw.), Phil. Mag. 1827, p. 441. —*O. tricolor*, Less., Gould, Mon. Trochil. iii. pl. 7.

40. Selasphorus heloisæ (Less. & Del.), R. Z. 1839, p. 15; Gould, Mon. Trochil. viii. pl. 2.

41. Calothorax lucifer (Sw.), Phil. Mag. 1827, p. 442; Bp. Consp. p. 85.

42. Calothorax eliza (Less. & Delattre).—*Tr. eliza*, Less. & Del. R. Z. 1839, p. 20.

43. Thaumastura duponti (Less.). — *Tryphaena duponti*, Gould, Mon. Trochil. i. pl. 14.

44. Lophornis helenæ (Delattre), Gould, Mon. Trochil. x. pl. 6.

Certhiidæ.

45. Synallaxis erythrothorax, Sclater, P. Z. S. 1855, p. 75. pl. lxxxvi.

Sallé, no. 109. Cordova. This is the only bird of the genus which I have as yet seen from north of the Isthmus of Panama.

46. Anabates rubiginosus, sp. nov.

Sallé, no. 102. Cordova.

Saturate brunneus; pileo obscuriore: alis extus, uropygio et cauda tota cum pectore saturate rubiginoso-rufis; gula clariore: ventre dorso concolore sed medialiter pallidiore: tectricibus subalaribus clare rubiginosis: rostro forti, crasso, recto, nigricante, basi pallida: pedibus nigricanti-plumbeis.

Long. tota 8·0, alæ 3·7, caudæ 3·3, rostri a rictu 1·2.

This fine *Anabates* is of the same strong form as *A. ferruginolentus* (Max.), but has shorter wings and rather a stiffer tail. I know of no species that resembles it much in colouring.

47. Anabates cervinigularis, sp. nov.

Sallé, no. 104. Cordova.

Supra saturate brunneus; pileo nigro: dorso summo nigricante adumbrato: plumis medialiter pallidioribus: loris, superciliis longis et cervicis lateribus clare rufis: gutture dilutiore, pallide cervino: abdomine flavescenti-brunneo lateraliter obscuriore: alarum pennis nigris extus brunneo limbatis, subtus autem cum tectricibus subalaribus clare rufis: uropygio et crisso cum cauda tota saturate rubiginoso-rufis: rostro validiusculo, recto, corneo, basi autem flavicante: pedibus pallide brunneis.

Long. tota 7·5, alæ 3·6, caudæ 3·0.

This species is not quite so strong in form as the last, and has not so thick a bill. In colouring it somewhat resembles *A. atricapillus*, but is much larger than that bird. The sexes are coloured alike.

48. Anabazenops variegaticeps, sp. nov.

Sallé, no. 204. Cordova. Sexes alike.

Supra brunneus: pilei pennis olivaceis, nigro angustissime circumcinctis et scapis plumarum flavicantibus: superciliis longis rufis: loris et regione auriculari nigris: mento et gutture toto ochracescenti-albidis: abdomine pallide brunneo: cauda clare rubiginoso-rufa: tectricibus subalaribus flavicanti-ochraceis: rostro pallide corneo, basi flavicante: pedibus pallide brunneis.

Long. tota 6·0, alæ 3·3, caudæ 2·7.

This bird closely resembles *Anabazenops rufo-superciliatus* (Lafr.), but may be recognized at once by the darker, browner back, and the variegated head, which in the latter species is of the same greenish brown as the back. In the present bird also there is not that decided mottled plumage on the breast observable in the other species, although there are slight indications of it on the sides of the neck.

49. Xenops mexicanus, sp. nov.

Rufescenti-olivaceus, capite obscuriore, uropygio rufo: loris albidis: stria superciliari angusta ochraceo-flavida: regione auriculari ochraceo-flavida, nigro mixta: penicilla utrinque sub regione auriculari alba: subtus dorso similis sed minus rufescens, mento et gutture medio ochracescenti-albidis: alis nigris: vitta lata per remiges cum secundariarum interiorum marginibus et terminationibus necnon secundariis dorso proximis rufis: cauda rufa: rectricibus duabus utrinque submedialibus omnino et rectricum his proximarum parte basali nigris, duabus mediis et una utrinque extima omnino rufis: rostro nigro, basi inferiore albicante: pedibus nigris.

Long. 4·6, alæ 2·7, caudæ 2·1.

Obs. Affinis *Xenopi genibarbi*, sed crassitie majore et colore subtus olivascentiore necnon gula ochracescenti-albida distinguendus. ♂ et ♀ similes.

Sallé, no. 115. Cordova.

50. Dendrornis flavigastra (Sw.).—*Xiphorhynchus flavigaster*, Sw. Phil. Mag. 1827, p. 440.—*Nasica flavigaster*, Lafr. R. Z. 1850, p. 383; DesMurs, Icon. Orn. pl. 52.

Sallé, no. 97. Cordova.

51. Dendrornis triangularis (Lafr.), R. Z. 1842, p. 134, 1850, p. 418, et Mag. de Zool. 1843, pl. 32.

Sallé, no. 99. Cordova.

52. Picolaptes affinis, Lafr. R. Z. 1850, p. 275?

Sallé, no. 98. Cordova. M. Sallé has brought home a single bird of this difficult group which I refer with some doubt to *P. affinis*, Lafr.

53. Sittasomus sylvioides, Lafr. R. Z. 1849, p. 331, et 1850, p. 590.

Sallé, no. 100. Cordova.

54. Sclerurus mexicanus, sp. nov.

Sallé, no. 101. Cordova.

Brunnescenti-olivaceus, pileo paulo obscuriore; uropygio cum cervice et pectore antice saturate rufis: mento albescentiore: alis nigris brunneo limbatis, rectricibus nigris, marginibus externis brunnescentibus: rostro nigro; basi inferiore albicante: pedibus nigerrimis.

Long. tota 6·5, alæ 3·2, caudæ 2·2.

M. Sallé's collection contains four examples of this interesting bird, which has never previously come under my notice. One marked as a female has the bill rather longer than the others, but does not otherwise differ from them. It may be at once distinguished from the Brazilian *S. caudacutus* (to which it shows great general resemblance) by its smaller size. Hartlaub's *S. fuscus* (R. Z. 1844, p. 370) seems to be larger, and differently coloured.

55. Certhia mexicana, Reich. Handb. d. Sp. Orn. p. 266.

Sallé, no. 106. Ranchos de Suapam.

I have not yet had an opportunity of comparing this bird with specimens of *C. americana.*

56. Scytalopus prostheleucus, sp. nov.

Sallé, no. 112. Cordova.

Supra brunneus, dorso rufescente: superciliis longis albis; lateribus capitis nigris albo variegatis: subtus albus; lateribus cineraceis, ventre imo et crisso rufescentibus: alis fusco-nigris extus rufescenti-brunneo transvittatis: tectricum apicibus albo maculatis: cauda tota nigricante et rufescenti-brunneo tessellata: rostro nigro: pedibus brunneis.

Long. tota 3·8, alæ 2·2, caudæ 1·0.

This Mexican species much resembles in colouring a Bogota bird in my collection, which I somewhat doubtfully refer to *S. griseicollis*, Lafr., but differs from it in having the lower parts cinereous and not white.

57. Troglodytes palustris (Wilson), Am. Orn. pl. xii. fig. 4.

Sallé, nos. 107 et 210. Romatlan.

58. Troglodytes hyemalis, Vieill., Wils. Am. Orn. pl. 8. fig. 6.

Sallé, no. 108. El Jacale.

59. Thryothorus maculipectus, Lafr. R. Z. 1845, p. 338.

Sallé, no. 111. Cordova.

60. Campylorhynchus zonatus (Less.), Cent. Zool. pl. 70.

Sallé, no. 59. Cordova.

MNIOTILTINÆ.

61. MNIOTILTA VARIA (Linn.).
Sallé, no. 128, ♂ et ♀.

62. HELMITHEROS SOLITARIUS (Wilson), Am. Orn. t. 15. fig. 4.
Sallé, no. 125. Cordova.

63. HELMITHEROS RUBRICAPILLUS (Wilson), Am. Orn. t. 27. fig. 3.
Sallé, no. 126. Cordova.

64. HELMITHEROS —— ?
Sallé, no. 123. Cordova, ♂.

Olivaceus: pileo cinereo: capite laterali et gutture toto cum pectore et ventre medio albidis: lateribus flavescenti-olivaceis.

Long. tota 4·2, alæ 2·2, caudæ 1·6.

This bird seems in plumage rather to resemble the female of *Trichas macgillivraii* as figured by Audubon (B. Amer. 8vo. ii. pl. 100. fig. 2), but certainly in my judgement belongs to this genus.

65. RHIMAMPHUS CORONATUS (Linn.).
Sallé, no. 120. Cordova, av. juv.

66. RHIMAMPHUS PENSILIS (Gm.).
Sallé, no. 211.

67. RHIMAMPHUS VIRENS (Gm.).
Sallé, no. 118.

68. RHIMAMPHUS OLIVACEUS (Giraud).—*Sylvia olivacea*, Giraud, B. Texas, p. 14. pl. 7. fig. 2.—*Sylvicola tæniata*, DuBus, Bull. Ac. Brux. xiv. p. 104; P. Z. S. 1855, p. 66; Cassin, B. Cal. i. pl. 48. p. 283.
Sallé, no. 191.

69. MYIODIOCTES MITRATUS (Lath.), Bp. Consp. p. 315.
Sallé, no. 121. Cordova.

70. MYIODIOCTES PUSILLUS (Wilson), Bp. Consp. p. 315.
Sallé, no. 122.

71. EUTHLYPIS LACRYMOSA, Cab. Mus. Hein. p. 19 (note).—*Basileuterus*, sp. 10; Bp. Consp. p. 314.
Sallé, no. 131. Cordova.

72. BASILEUTERUS RUFIFRONS (Sw.).—*Setophaga rufifrons*, Sw. An. in Men. p. 294; Bp. Consp. p. 314.
Sallé, no. 124.

73. Basileuterus brasieri (Giraud).—*Muscicapa Brasierii*, Giraud, B. Texas, pl. 6. fig. 2.—*B. culicivorus*, Cab. Mus. Hein. p. 17; Bp. Consp. p. 313; P. Z. S. 1855, p. 66.

Sallé, no. 127, ♂ et ♀ similes. Cordova.

74. Setophaga ruticilla (Linn.).

Sallé, no. 174.

75. Setophaga picta, Sw. Zool. Ill. n. s. pl. 3; Bp. Consp. p. 312.

Sallé, no. 188.

76. Setophaga miniata (Sw.).—*Muscicapa miniata*, Sw. Phil. Mag. 1827, p. 368. — *Muscicapa vulnerata*, Wagler, Isis, 1831, p. 520.—*Muscicapa derhamii*, Giraud, B. Texas, pl. 3. fig. 2.

Sallé, no. 81.

77. Granatellus Sallæi (Plate CXX.).—"*Setophaga sallæi*, Bp. et Sclater;" Bp. Compt. Rend. 1856, May.

Sallé, no. 129. Cordova.

Cæruleo-plumbea, superciliis vix obscurioribus: litura postoculari alba: genis gulaque plumbescentibus: pectore et abdomine medio cum crisso rosaceo-coccineis: lateribus postice albis: alis caudaque nigricantibus, plumbeo extus marginatis: rostro crasso, paululum incurvo, nigricanti-plumbeo; vibrissis fere nullis: pedibus pallide brunneis.

Long. tota 5·2, alæ 2·4, caudæ 2·3.

This very pretty bird, of which M. Sallé only procured a single specimen, is, I think, upon reconsideration hardly to be placed in the genus *Setophaga*, although so closely resembling many species of that genus in its style of colouring. The bill is quite different from that of *Setophaga*, and is more like that of *Nemosia*, being even thicker than in some species of the latter form, but rather more incurved. The characters given by Prince Bonaparte for his genus *Granatellus* (founded upon a bird figured in an unpublished plate of DuBus's *Esquisses Ornithologiques*) seem to agree better with this bird, and from the description of the only species of that genus (which I have never seen) I cannot help thinking that it may have something to do with the present bird. I therefore place them for the present in the same genus.

78. Cardellina rubra (Sw.). — *Setophaga rubra*, Sw. Phil. Mag. 1827, p. 368; Cassin, B. Cal. pl. 43. p. 265.—*Parus leucotis*, Giraud, B. Texas, pl. 4. fig. 2.

Sallé, no. 119. El Jacale.

79. Trichas marilandica (Linn.), Wils. Am. Orn. pl. 6. fig. 1. —*Trichas personatus*, Sw. Phil. Mag. 1827, p. 433.

Sallé, no. 130.

80. TRICHAS DELAFIELDI, Audub. Orn. Biogr. v. p. 307; B. Am. 8vo. ii. p. 81. pl. 103.

Sallé, no. 209.

M. Sallé's specimens seem to agree with Audubon's figures and descriptions of *Trichas delafieldi*.

ERITHACINÆ.

81. SIALIA WILSONI (Sw.), Wils. Am. Orn. pl. 3. fig. 5.

Sallé, no. 85 bis. Cerro del Gallego; Cordova.

82. SIALIA MEXICANA, Sw. North. Zool. ii. p. 202 (note).—*S. occidentalis*, Townsh. Journ. Ac. Phil. vii. p. 188; Aud. B. Am. 8vo. ii. pl. 135.—*S. cæruleicollis*, Vig. Zool. Beechey's Voy. Pacif. pl. 3.

Sallé, no. 85.

PARINÆ.

83. PARUS MERIDIONALIS, sp. nov.

Sallé, no. 167. El Jacale.

Supra cinereus: alis caudaque nigricantibus brunnescenti-cinereo limbatis: pileo toto cum nucha, gutture et cervice antica nigerrimis: genis et capite laterali albis: abdomine cinereo brunnescente tincto; pectore et ventre medio albidis: rostro nigro: pedibus plumbeis.

Long. tota 4·8, alæ 2·65, caudæ 2·3.

This Titmouse is a very close ally of *Parus atricapillus* and *Parus carolinensis*. I am sorry I have not been able to compare it with authentic specimens of those species, but, as far as I can judge from Mr. Cassin's excellent synopsis of American Parinæ given in his 'Birds of California,' it would appear—as by the locality it comes from would seem most probable—to be distinct from either of those species.

From *P. carolinensis* it appears to differ in its greater size, being nearly half an inch longer than the dimensions assigned to that bird by Mr. Cassin. It would hardly seem likely that it is the same as *P. atricapillus*, which is an inhabitant of the more northern states of the Union, and the slightly inferior size and white medial line on the lower parts seem to distinguish it from that species.

SITTINÆ.

84. SITTA CAROLINENSIS, Latham.

Sallé, no. 199.

MOTACILLINÆ.

85. HENICOCICHLA AURICAPILLA (Gm.), Cab. Mus. Hein. p. 15.

Sallé, no. 59.

86. ANTHUS LUDOVICIANUS (Gm.).

Sallé, no. 200.

87. **Anthus** ——?
Sallé, no. 201.

Turdinæ.

88. **Turdus migratorius**, Linn., Sw. Phil. Mag. 1827, p. 368.
Sallé, no. 54. Rotosinapam.

89. **Turdus tristis** (Sw.).—*Merula tristis*, Sw. Phil. Mag. 1827, p. 369.—*Turdus grayi*, Bp. P. Z. S. 1837, p. 118; Consp. p. 272.—*Turdus helvolus*, Licht. in Mus. Berol.
Sallé, no. 53. Cordova.

90. **Turdus mustelinus**, Gm., Wils. Am. Orn. pl. 2. fig. 1.
Sallé, no. 58. Cordova.

91. **Catharus aurantiirostris** (Hartlaub).—*Turdus aurantiirostris*, Hartl. R. Z. 1850, p. 158; Cont. Orn. 1851, pl. 72. p. 80.—*Catharus immaculatus*, Bp. Consp. p. 278.
Sallé, no. 164. Cordova.
I have not had an opportunity of comparing these specimens with Venezuelan examples, but, judging from the published figures and descriptions, I can detect no great difference.

92. **Mimus cærulescens** (Sw.).—*Orpheus cærulescens*, Sw. Phil. Mag. 1827, p. 369; Temm. Pl. Col. 498.
Sallé, no. 56. Cordova.

93. **Mimus carolinensis** (Linn.), Wils. Am. Orn. pl. 20. fig. 3.
Sallé, no. 57. Cordova.

94. **Mimus longirostris** (Lafr.).—*Orpheus longirostris*, Lafr. R. Z. 1838, p. 54; Cab. Mus. Hein. p. 81.
Sallé, no. 93. Cordova.

Formicariidæ.

95. **Grallaria guatimalensis**, Prevost, Zool. Venus, pl. 2.—*Chamæza guatimalensis*, Bp. Consp. p. 204.
Sallé, no. 52. Cordova.
This fine *Grallaria* is a typical species of the genus, a strict northern representative of *Grallariæ rex* and *imperator*, and by no means to be placed among the *Chamæzæ*.

96. **Formicarius moniliger**, sp. nov.

Supra brunnescenti-olivaceus, colli lateribus et uropygio rufescentioribus, pileo nigricantiore: macula in loris triangulari alba: gutture toto nigro, infra vitta angusta rufa cincta: abdomine toto nigricanti-griseo, lateribus et crisso olivaceo perfusis: regione oculari nuda: tectricibus subalaribus ochraceis, nigro variegatis: caudæ parte apicali nigra: rostro nigro: pedibus clare brunneis.
Sallé, no. 105, ♂ et ♀ similes. Cordova.

A typical *Formicarius*, a close ally of *F. cayanensis*, *analis*, &c., but distinguished by its black throat, bordered beneath by a narrow band of rufous; white triangular spot on the lores; and other differences. It is the first of the form found to occur so far north.

97. THAMNOPHILUS DOLIATUS (Linn.).

Sallé, no. 65, ♂ et ♀.

TYRANNIDÆ.

98. TODIROSTRUM CINEREIGULARE, sp. nov.

Olivaceum: alis caudaque nigris, flavicante olivaceo limbatis: orbitis antice nigricantibus: loris albidis: subtus gutture et cervice cinereis aut potius albis cinereo dense striolatis: pectore olivaceo: abdomine toto et tectricibus subalaribus flavis: rostro compressiusculo, crassiusculo; culmine carinato, incurvo; colore nigricante, tomiis pallidis: pedibus pallide brunneis.

Long. tota 3·6, alæ 1·7, caudæ 1·2.

Sallé, no. 89, ♂. Cordova.

This *Todirostrum* differs slightly in the form of the bill from the ordinary members of the genus, that part being rather thicker, and with the culmen elevated and more incurved than in the typical species of the group.

99. MUSCIVORA MEXICANA, sp. nov.

"*Megalophus mexicanus*, Kp.," Bp. MS.

Brunnea: uropygio, cauda tota et corpore subtus flavescenti-ochraceis, gutture albidiore: alis extus ochraceo punctatis et subtus (nisi primariorum apicibus) omnino ochraceis: crista ampla, aureo-flava, cærulescente æneo terminata: rostro productiore quam in M. regia*: pedibus flavidis.*

Long. tota 6·0, alæ 3·3, caudæ 2·8, rostri a rictu 1·3.

Sallé, no. 78. Cordova.

M. Sallé's collection contains a single example of this interesting bird, which however was not procured by himself, and is unfortunately not in very good condition. It is probably the *Megalophus mexicanus* of Dr. Kaup, which I have seen indicated in Prince Bonaparte's MS., but which I believe is merely an unpublished name. From the common *Muscivora regia*, to which it offers a close general resemblance, it may be distinguished by its longer bill, and having the base of the crest of a paler yellower tint, and the tips with less purplish colouring.

The *Muscivora castelnauii* (*Onychorhynchus castelnaui*, Deville, R. Z. 1849, p. 56), the only second member of the genus hitherto known, from Eastern Peru, on the other hand appears to have a shorter bill and more reddish crest than the typical species.

100. PLATYRHYNCHUS CANCROMA (Licht.), Bp. Consp. p. 183.

Sallé, no. 90. Cordova, ♂ et ♀ similes.

I can find no difference between these and S. American specimens.

101. Cyclorhynchus brevirostris, Cab. Orn. Notiz. in Wiegm. Arch. 1847, p. 249.

Sallé, no. 82. Cordova.

This bird is readily distinguished from the Brazilian *C. olivaceus* by its shorter and more rounded beak.

102. Pyrocephalus rubineus (Bodd.).—*Tyrannula coronata*, Sw. Phil. Mag. 1827, p. 367; Cassin, B. Cal. pl. 18. p. 127.

Sallé, no. 94, ♂ et ♀. Cordova.

103. Tyrannula sulphureipygia, sp. nov.

Sallé, no. 84. Cordova.

Olivacea: pilei crista mediali flava: uropygio pallide sulphureo: alis caudaque nigris, secundariis extus brunnescente limbatis: subtus flavicanti-brunnea, gula et ventre medio flavis.

Long. tota 5·2, alæ 2·8, caudæ 2·3.

Obs. Aff. *T. barbatæ* ex America Meridionali, sed statura majore, colore uropygii pallidiore et corporis subtus brunnescentiore distinguenda.

104. Tyrannula ——?

Sallé, no. 88, ♂ et ♀ similes. Cordova.

105. Tyrannula ——?

Sallé, no. 92, ♀. Cordova.

106. Tyrannula ——?

Sallé, no. 83, ♂. Cordova.

107. Tyrannula ——?

Sallé, no. 95.

These little Tyrants are in such a sad state of confusion at present, that it only makes matters worse to attempt to describe new species.

108. Mionectes oleaginus (Licht.), Bp. Consp. p. 187.

Sallé, no. 91. Cordova.

M. Sallé's specimens seem to agree with South American examples.

109. Sayornis nigricans (Sw.).—*Tyrann. nigricans*, Sw. Phil. Mag. 1827, p. 367.

Sallé, no. 86. Cordova.

110. Myiarchus mexicanus (Kp.), P. Z. S. 1851, p. 51?

Sallé, no. 77. Cordova.

111. Elænia texensis (Giraud).—*Musc. texensis*, Giraud, B. Texas, pl. 1.—*Tyr. cayennensis*, Sw. Phil. Mag. 1827, p. 367.

Sallé, no. 76, ♂ et ♀ similes.

Hardly distinct from *Elænia cayennensis*. The back is rather more tinged with green, and there is more white on the front than in the South American bird. The dimensions are perhaps slightly larger, and the bill longer.

112. ELÆNIA VARIEGATA, sp. nov.

Sallé, no. 80. Cordova, ♂ et ♀ similes.

Supra brunnea, olivascente tincta, marginibus plumarum pallidioribus : alis caudaque nigricantibus, illarum tectricibus extus albo marginatis : pileo et capitis lateribus nigris : crista mediali flava : superciliis a fronte circum nucham conjunctis, albis : subtus pallide flava, gutture albo, striga utrinque rictali nigra : pectore nigricante flammulato : rostro et pedibus nigris.

Long. tota 6·2, alæ 3·7, caudæ 2·6.

Obs. Affinis *Elæniæ albicolli* (Vieill.) ex America Meridionali sed crassitie majore: coloribus lætioribus.

113. ELÆNIA —— ?

Sallé, no. 93. Cordova, ♀.

114. MILVULUS TYRANNUS (Linn.).

Sallé, no. 79. Plains of Vera Cruz.

115. TYRANNUS MELANCHOLICUS, Vieill.—*M. furcata*, Spix, Av. Bras. ii. p. 15. pl. 19.

Sallé, no. 208.

116. TYRANNUS AUDAX (Gm.)?

Sallé, no. 87. Cordova.

M. Sallé's examples of this bird are much more brightly coloured than any S. American specimens which have come under my observation. The belly is also wholly of a pale sulphur-yellow, instead of being only tinged with that colour. When the group is properly worked out, this will probably be found to constitute a sufficiently distinct species.

117. TYRANNUS COOPERI (Nutt.), Aud. Orn. Biogr. ii. p. 422?

Sallé, no. 207.

118. PITANGUS DERBIANUS (Kp.).—*Saurophagus derbianus*, Kp. P. Z. S. 1851, p. 44. pl. 36. — *Saurophagus rufipennis*, Lafr. R. Z. 1851, p. 471 ?.—*Saurophagus sulphuratus*, Gambel in Journ. Ac. Sc. Phil. i. p. 39 ?

Sallé, no. 75. Cordova.

TITYRINÆ.

119. TITYRA MEXICANA (Less.) : *antea*, p. 141.

Sallé, no. 67.

120. PACHYRHAMPHUS AGLAIÆ (Lafr.), R. Z. 1839, p. 98.

Sallé, no. 96. Cordova.

♂ adult. *Niger, cristatus, uropygium versus schistacescentior :*

subtus pallide schistaceus, collo antico late roseo : scapularibus intus, et remigum primariarum (nisi duarum exteriorum) basibus internis albis.

♂ immat. *Brunneus nigro mixtus : capite cristato nigro : alis extus rufis : subtus pallidior, collo rosaceo imbuto.*

♀. *Rufescens : alis intus nigris : harum marginibus et cauda tota læte rufis : capite cristato nigro : subtus albescenti-cinnamomeus : tectricibus subalaribus cinnamomeis.*

Long. tota 6·5, alæ 3·5, caudæ 2·6.

I think that some recent Naturalists have acted rather hastily in uniting together the various rose-necked Becards into one species. The present bird appears to me to be sufficiently distinct from *P. pectoralis* of Cayenne, and M. de Lafresnaye has already pointed out its difference from the Bolivian *P. roseicollis*. From my specimens of the former it may be recognized by its lighter colour below, and the broader rose-coloured bar on the throat. Besides, the second abnormally short primary of the adult male has not the large white blotch on the interior web which is observable in the *P. pectoralis*.

121. PACHYRHAMPHUS MARGINATUS (Licht.)?

Sallé, no. 184.

A single specimen of a bird of the general appearance of the S. American *P. marginatus*, which has been divided into several subspecies by Dr. Kaup (P. Z. S. 1851, p. 48), but showing rather broader white margins to the wings and tail.

MUSCICAPINÆ.

122. POLIOPTILA ——?

Sallé, no. 117. Cordova.

Three specimens all alike (one of which is marked '*male*') seem to agree with the female of the bird figured by Mr. Cassin, Birds of Cal. pl. 27, under the name of *C. mexicana*. The specimen marked '*male*' is possibly therefore not adult, as there are no traces of the black cap.

VIREONINÆ.

123. VIREO SOLITARIUS (Wilson), Cassin in Pr. Ac. Phil. v. 150.

Sallé, no. 133.

124. VIREOSYLVIA GILVA (Vieill.), Cassin in Pr. Ac. Phil. v. 153.

Sallé, no. 123.

125. VIREOSYLVIA FLAVO-VIRIDIS, Cassin, Pr. Ac. Sc. Phil. v.

Sallé, no. 205, p. 152. pl. 11.

126. ICTERIA VELASQUEZI, Bp. P. Z. S. 1837, p. 117 ; Consp. p. 331?

Sallé, no. 204.

The Mexican *Icteria* seems distinct from the black-billed *I. viridis* of the United States; but I confess I am wholly unable to decide whether it is the second or third species of Prince Bonaparte's Conspectus. *Are* there really two Mexican species? and what is the Californian *I. longicauda*?

127. CYCLORHIS FLAVIVENTRIS, Lafr. R. Z. 1842, p. 330.

Sallé, no. 162.

I have examples of this species from Guatimala.

PIPRINÆ.

128. MANACUS CANDEI (Parzud.), Bp. Consp. p. 171.

Sallé, no. 170. Cordova.

M. Sallé obtained only a single specimen of this beautiful Manakin, which was originally brought from Honduras.

129. PIPRA MENTALIS, sp. nov. (Plate CXXI.)

Sallé, no. 171. Cordova.

Nigra: capite toto cum nucha coccineis: mento summo tibiisque plumosis et tectricibus subalaribus flavis.

♀. *Pallide viridis, subtus paulo dilutior.*

Long. tota 4·0, alæ 2·3, caudæ 1·1.

This Manakin is a beautiful Mexican representative of *P. rubricapilla* and *P. chloromeros*. From the former it may be distinguished by its yellow thighs, from the latter by its yellow chin and under wing-coverts.

AMPELINÆ.

130. AMPELIS CEDRORUM (Vieill.), Wagl. Isis, 1831, p. 528.

Sallé, no. 134. Cordova.

131. PTILOGONYS CINEREUS, Sw., Bp. Consp. p. 335.

Sallé, no. 185.

132. MYIADESTES UNICOLOR, sp. nov.

Hypothymis cæsia, Licht. in Mus. Berol.?

Schistacea unicolor, subtus pallidior, ventre albicantiore: remigibus nigris, harum autem (nisi trium extimarum) basibus alula spuria partim celatis, cum marginibus ipsarum et secundariarum apicem versus externis brunnescenti-oleagineis; hoc colore intus sub ala albidiore: cauda nigra; rectricibus duabus mediis schistaceis, harum duarum utrinque extimarum parte apicali pallidiore et apicibus ipsis cum margine interna apicem versus albis: rostro et pedibus nigris.

Long. tota 7·5, alæ 3·8, caudæ 3·4.

Sallé, no. 150. Cordova, ♂ et ♀ similes.

This bird is certainly quite distinct from Lafresnaye's *M. obscura*, of which I possess examples from Guatimala. Judging from Audubon's plate and description it likewise would seem different from *P. townshendi*, which has been united to Lafresnaye's species, I believe quite erroneously, by Prince Bonaparte.

My impression is that the Berlin Museum specimens, marked "*Hypothymis cæsia*," are identical with the present bird; but as I have no means of verifying that fact, and the name is merely in MS., I think it safer to give it a new appellation.

Lafresnaye's *M. obscurus* (R. Z. 1839, p. 99), of which I have examples procured near the city of Guatimala by Signor Constancia, may be recognized at once from the present species by its brown back and rufous wing-edgings.

GARRULINÆ.

133. PSILORHINUS MORIO (Licht.), Bp. Consp. p. 381.

Sallé, no. 12. Cordova.

M. Sallé has procured a fine series of specimens of this bird, showing every variety in the colouring of the bill from black to yellow.

134. CYANOCORAX LUXUOSUS (Less.), DuBus, Esq. Orn. pl. 18; Cassin, B. Cal. pl. 1. p. 1.—*C. peruvianus*, Cassin, Pr. Ac. Phil. iv. p. 89, nec auct.

Sallé, no. 47, ♂ et ♀. Cordova.

135. CYANOCITTA FLORIDANA (Bartram), Bp. Consp. p. 377.

Sallé, no. 186.

Prince Bonaparte identifies a somewhat immature bird in M. Sallé's collection as belonging to this rare species.

STURNIDÆ.

136. QUISCALUS MACRURUS, Sw., Bp. Consp. p. 424.

Sallé, no. 130. Cordova, ♂ et ♀.

Maris long. tota 19·0, alæ 8·9, caudæ 9·0; fœminæ long. tota 14·5, alæ 6·3, caudæ 6·8.

137. QUISCALUS ——?

Sallé, no. 29, ♂ et ♀.

Nigro-nitens unicolor, rostro et pedibus nigerrimis.

Long. tota 10·8, alæ 5·2, caudæ 5·2.

138. MOLOTHRUS ÆNEUS (Wagl.), Cab. Mus. Hein. p. 192, note.

Sallé, no. 28. Cordova, ♂ et ♀.

139. CACICUS MONTEZUMÆ (Less.), Cont. Zool. pl. 7.—*C. bifasciatus*, Spix?—*Ostinops bifasciatus*, Cab. Mus. Hein. p. 187.

Sallé, no. 26. Cordova, ♂ et ♀.

Castaneus: capite toto cum corpore subtus nigricantibus, hoc colore ventrem versus in castaneum transeunte: tibiis et alis subtus *nigris : cauda flavissima : rectricibus duabus mediis solum nigris : rostro nigro, dimidio apicali ruberrimo.*

Long. tota 17·0, alæ 9·3, caudæ 7·0.

♀. *Mari similis, sed minor.*

Long. tota 14·0, alæ 7·6, caudæ 6·0.

140. CASSICULUS PREVOSTI (Less.), Bp. Consp. p. 428.

Sallé, no. 27.

141. STURNELLA HIPPOCREPIS, Wagl., Isis, 1832, p. 281 ; Cassin, Pr. Ac. Phil. iv. p. 90.

Sallé, no. 135, ♀.

This bird is clearly distinguishable from the *S. ludoviciana* by its smaller size and the smaller breast-mark. But the name *hippocrepis* was established upon Cuban specimens. Are they quite the same as this Mexican bird ?

142. ICTERUS MELANOCEPHALUS (Wagl.), Cassin, B. Cal. pl. xxi. p. 137.

Sallé, no. 60.

143. ICTERUS MESOMELAS (Wagl.), Isis, 1829, p. 755.—*I. atrigularis,* Less. Cent. Zool. pl. 22. p. 73. — *Oriolus musicus,* Cabot. Boston Journ. N. H. iv. 465.

Sallé, no. 61. Cordova.

144. ICTERUS CUCULLATUS, Sw. Phil. Mag. 1827, p. 436 ; Cassin, B. Cal. pl. 8. p. 42.

Sallé, no. 63. Cordova, ♂ et ♀.

145. ICTERUS PROSTHEMELAS (Strickl.), Cont. Orn. 1850, p. 120. pl. 62.

Sallé, no. 63. Cordova.

This species has the under tail-coverts yellow. I think the bird resembling this, but with these parts black, which Mr. Strickland mentions in his description of *I. prosthemelas,* is probably a distinct species ; but the whole group requires to be thoroughly revised and worked out before additional names are given.

146. BANANIVORUS AFFINIS (Townshend).—*Xanthornus affinis,* Townsh. Ann. Lyc. N. Y. 1851, p. 113, cum tab.

Sallé, no. 146. Cordova, ♂, ♂ juv. et ♀.

COCCOTHRAUSTINÆ.

147. HEDYMELES LUDOVICIANUS (Linn.), Wils. Am. Orn. pl. 17. fig. 2.

Sallé, no. 154, ♂ et ♀. Cordova.

148. GONIAPHEA CÆRULEA (Linn.), Wils. Am. Orn. pl. xxiv. f. 6.

Sallé, no. 155. Cordova.

149. GONIAPHEA PARELLINA (Bp.).— *Cyanoloxia parellina*, Bp. Consp. p. 502.

Sallé, no. 159. Cordova, ♀.

♂. *Brunnea unicolor: alis caudaque intus fuscis.*

Long. tota 5·0, alæ 2·6, caudæ 2·0.

The bill of this specimen is slightly larger than that of a male *G. parellina* in my collection, but it otherwise agrees with it in dimensions.

150. GONIAPHEA CONCRETA (DuBus).—*Cyanoloxia concreta*, DuBus, Bull. Ac. Brux. xxii. p. 150 (1855).

Sallé, no. 175. Orizaba.

M. Sallé's collection contains a single specimen of this rare species.

151. CARDINALIS VIRGINIANUS, Bp. Consp. p. 501.

Sallé, no. 152, ♂ juv. Cordova.

152. SPERMOPHILA MORELLETI, Bp. Consp. p. 497?

Sallé, no. 165. Cordova, ♂ juv. et ♀.

♀ juv. *Supra rufescenti-cinereus: pileo summo et capitis lateribus cum alis caudaque nigris: tectricum alarium fascia duplici cum speculo primariarum basali et tectricibus subalaribus albis: subtus pallide rufescenti-ochraceus, gutture albicante.* ♂ junior *aut* ♀ *rufescenti-olivaceus, subtus dilutior, ochracescentior: alis caudaque fuscis, ochraceo bifasciatis.*

My belief is that these are both young stages of a black and white species of *Spermophila*, probably *Sp. morelleti*, of which I have an adult specimen from Honduras. I have an example of the same bird as M. Sallé's, showing more black on the back and traces of the pectoral band, from Orizaba, collected by Botteri.

Mr. Lawrence's *Sp. albigularis* (described in the Annals Lyc. N. Y. v. p. 124) is also probably referable to this same species.

TANAGRINÆ.

153. PITYLUS POLIOGASTER, DuBus: *antea*, p. 66.

Sallé, no. 151. Cordova.

154. SALTATOR ATRICEPS, Less. Cent. Zool. pl. 69: *antea*, p. 69.

Sallé, no. 49. Cordova.

155. SALTATOR MAGNOIDES, Lafr.: *antea*, p. 69.

Sallé, no. 50. Cordova.

156. BUARREMON BRUNNEINUCHUS (Lafr.): *antea*, p. 85.

Sallé, no. 66. Cordova.

157. CHLOROSPINGUS OPHTHALMICUS (Dubus): *antea*, p. 89.

Sallé, no. 132. Cordova.

158. Lanio aurantius, Lafr.: *antea*, p. 119.
Sallé, no. 158. Orizaba, ♀.

159. Phœnicothraupis rubicoides (Lafr.).—*Saltator rubicus*, Cassin, Pr. Ac. Sc. Phil. iv. 90: *antea*, p. 120.

Sallé, no. 141. Cordova.

M. Sallé's collection contains a fine series of specimens of this bird, showing every stage of transition between the brown plumage of the young and the rosy red of the adult. They appear to be rather variable in size.

160. Pyranga æstiva (Linn.).
Sallé, no. 139. Cordova, ♂ et ♀.

161. Pyranga erythromelæna (Licht.): *antea*, p. 126.
Sallé, no. 143. Cordova.

162. Ramphocelus sanguinolentus (Less.): *antea*, p. 132.
Sallé, no. 138. Cordova.

163. Tanagra abbas, Licht.: *antea*, p. 235.
Sallé, no. 142. Cordova.

164. Tanagra diacomus, Less.: *antea*, p. 233.
Sallé, no. 140. Cordova.

165. Euphonia elegantissima (Bp.).—*Pipra galericulata*, Giraud: *antea*, p. 272.

Sallé, no. 147.

166. Euphonia affinis, Less.: *antea*, p. 274.
Sallé, no. 213. Orizaba.

167. Euphonia hirundinacea, Bp.: *antea*, p. 278.
Sallé, no. 148. Cordova.

168. Euphonia ——?
Sallé, no. 187.

Olivacea æneo tincta: pileo antico flavo: abdomine medio et crisso castaneis flavo mixtis.

Long. tota 3·7, alæ 2·4, caudæ 1·2.

This seems to be a female of an undescribed *Euphonia*.

Fringillinæ.

169. Chrysomitris mexicana (Sw.), Phil. Mag. 1827, p. 435.—*Fringilla texensis*, Giraud, B. Texas, pl. 5. fig. 1.

Sallé, no. 149, ♂. Cordova.

170. Chrysomitris notata (DuBus), Bp. Consp. p. 516.—*Carduelis magellanica*, Audubon?

Sallé, no. 198, ♂ et ♀. Orizaba.

171. Carpodacus hæmorrhous (Licht.).—*Carp. frontalis*, Cab. Mus. Hein. p. 166.—*Fring. hæmorrhoa*, Licht. Preis—Verz. 1831, sp. 57; Wagl. Isis, 1831, p. 525.—*Pyrrhula frontalis*, Sw. Phil. Mag. 1827, p. 435.—*Pyrrhulinota hæmorrhoa*, Bp. Compt. Rend. 1856.

Sallé, no. 181, ♂. S. Andres Gorion.

There is not the least doubt about the perfect distinctness of this bird from *Carpodacus rhodocolpus*, Cab. Mus. Hein. p. 166 (*Carp. familiaris*, Mc Call, Pr. Ac. Sc. Phil. vi. p. 61; Cassin, B. Cal. pl. xiii. p. 73), but to which species is Say's name *frontalis* really applicable? It appears to me, and I believe Prince Bonaparte is also of the same opinion, that the latter bird is that which ought to bear Say's name. These two *Carpodaci* may be distinguished by the following diagnoses:—

C. hæmorrhous, *fronte et superciliis latis cum gutture toto coccineis.*

C. rhodocolpus, *paulo minor: capite toto et gutture cum pectore rosaceo-coccineo perfusis.*

A fourth or, if *C. obscurus* is a valid species, a fifth American bird of this genus has recently been described by Baird under the name *C. cassinii* (v. Pr. Ac. Sc. Phil. vi. 119).

Emberizinæ.

172. Spiza ciris (Linn.).

Sallé, no. 145. Cordova, ♂ et ♀.

173. Spiza cyanea (Linn.).

Sallé, no. 166. Cordova, ♂ juv. et ♀.

174. Volatinia jacarina (Linn.).

Sallé, no. 163. Cordova.

175. Phonipara pusilla (Sw.), Sclater, P. Z. S. 1855, p. 159.—*Tiaris pusillus*, Sw. Phil. Mag. 1827, p. 438.—*Tiaris olivaceus*, Cassin in Pr. Ac. Phil. iv. p. 91, et al. auct. nec Linn.

Sallé, no. 172. Cordova.

176. Pipilo maculatus, Sw. Phil. Mag. 1827, p. 434.

Sallé, no. 144. Maltrato.

177. Pipilo fuscus, Sw. Phil. Mag. 1827, p. 434; Cassin, B. Cal. pl. 17. p. 124?

Sallé, no. 168. San Andres Chalchicomula.

Dr. Baird has recently separated a bird from this species under the name of *P. mesoleucus* (Pr. Ac. Sc. Phil. vii. p. 119). The present examples do not exactly agree with the characters assigned by him to either of the species, but from its locality there is little doubt of its being the true *P. fuscus* of Swainson.

178. AIMOPHILA RUFESCENS, Sw., Bp. Consp. p. 486.
Sallé, no. 156. Cordova.

179. AIMOPHILA SUPERCILIOSA, Sw., Bp. Consp. p. 486.
Sallé, no. 158. Cordova.

180. ZONOTRICHIA MYSTACALIS, Hartlaub, R. Z. 1852, p. 3.
Sallé, no. 192.

181. ZONOTRICHIA —— ?
Sallé, no. 194.

182. PASSERCULUS ALAUDINUS, Bp. Notes Orn. p. 18; Compt. Rend. May 1856.
Sallé, no. 169, ♂. Cordova.

183. PASSERCULUS ZONARIUS, Bp. Compt. Rend. 1856, sed DESCRIPTIO NULLA! (=*Peucæa lincolni*, Aud.?)
Sallé, no. 177, ♂ et ♀. Cordova.

Supra fuscus nigro striatus, pileo utrinque rufo, medialiter autem (sicut superciliis) fusco: subtus albus, vitta lata pectorali et hypochondriis cum crisso pallide rufescenti-fuscis, nigro striatis: gutture quoque albo, nigro sparsim striato: loris albidis: rostro pallido: pedibus flavidis.

Long. tota 5·0, alæ 2·3, caudæ 2·2.

184. PASSERCULUS —— ?
Sallé, no. 202.

185. PASSERCULUS —— ?
Sallé, no. 196.

186. SPIZELLA SOCIALIS (Wilson).
Sallé, no. 179. Orizaba.

I have a specimen of this same bird procured near Orizaba by M. Botteri.

187. COTURNICULUS HENSLOWII, Audub. (teste Bp.).
Sallé, no. 161. Cordova.

188. COTURNICULUS —— ?
Sallé, no. 176. Orizaba.

189. COTURNICULUS —— ?
Sallé, no. 195.

These two birds are both rather obscure in plumage, and are not very good specimens.

190. **Junco cinereus** (Sw.), Phil. Mag. 1827, p. 435.—*Junco phæonotus*, Wagler, Isis, 1827, p. 526.—*Niphæa rufidorsis*, Licht. Nomencl. p. 43.

Sallé, no. 157. El Jacale.

There is no question, I believe, that this bird is strictly congeneric with *Niphæa hyemalis* and *N. oregona*. And all three species ought to bear the generic name *Junco*, established by Wagler in 1827.

191. **Embernagra rufivirgata**, Lawrence, Ann. Lyc. N. Y. 1851, v. p. 112. pl. 5. fig. 2.

Sallé, no. 153. Cordova.

192. **Geospizopsis melanotis**, Bp. Compt. Rend. May 1856, note.

Sallé, no. 193.

This is certainly a remarkable bird, and I hardly know what to make of it. The single specimen obtained is immature, and the wings are unfortunately imperfect. In my opinion, however, it has nothing to do with *Passerculus geospizopsis*, Bp. (which the author now considers the type of this genus under the name *Geospizopsis typus*), that bird being, I believe, nothing more than the female of a species of *Phrygilus* allied to *P. unicolor* (*vide* P. Z. S. 1855, p. 160).

193. **Otocorys chrysolæma**, Wagl. Isis, 1831, p. 525.

Sallé, no. .

The American species of this genus require a searching revision. I have not access to specimens of the other species except the South American *O. peregrina*.

Psittacidæ.

194. **Pionus senilis** (Spix), Av. Bras. i. pl. 31. fig. 1.—*Ps. leucorhynchus*, Sw. Phil. Mag. 1827, p. 438.

Sallé, no. 1. Cordova.

Though this bird is figured as Brazilian by Spix, I believe Southern Mexico to be its true habitat, and that it does not range south of the Isthmus of Panama.

195. **Psittacula lineolata**, Cassin, Pr. Ac. Sc. Phil. vi. p. 372.—"*Myiopsitta tigrina*, Souancé," Bp. Compt. Rend. May 1856.

Sallé, no. 2. Cordova.

This is the only example I have yet seen of this interesting Parrot.

Picidæ.

196. **Dryocopus scapularis** (Vig.) (*teste Malherbio*).

Sallé, no. 17. Cordova.

197. **Dryocopus erythrops** (Cuv.), DesMurs, Icon. Orn. pl. 37 (*teste Malherbio*).

Sallé, no. 18. Cordova, ♂.

198. Colaptes mexicanus, Sw. Phil. Mag. 1827, p. 440.

Sallé, no. 19. Suapam, ♀.

199. Melanerpes formicivorus (Sw.), Phil. Mag. 1827, p. 439; Cassin, B. Cal. pl. 2. p. 7.—*M. melanopogon*, Bp. Consp. p. 115.

Sallé, no. 22, ♂ et ♀.

My belief is that Malherbe is quite right in separating this species from the South American *M. flavigularis* (*M. formicivorus*, Bp. Consp. p. 115. sp. 5, nec Licht.). The two species are rightly distinguished by Prince Bonaparte (Consp. p. 115), but his synonymy and localities are both wrong. Both the terms *melanopogon* and *formicivorus* are primarily applicable to this Mexican species, and the other from the northern portion of S. America must be called *flavigularis*, Malherbe. The female of the present bird has the nape red; in the other female this part is black.

200. Centurus santacruzi, Bp. P. Z. S. 1837, p. 116.

Sallé, no. 20. Cordova.

Agrees with Guatimala specimens.

201. Chloronerpes yucatanensis, Cabot, Bost. Journ. N. H. v. p. 92.—*P. æruginosus*, Licht. in Mus. Berol.

Sallé, no. 21, ♂ et ♀. Cordova.

Clare olivaceus: alis extus et caudæ marginibus aurulente brunneis: subtus flavidus, olivaceo transversim dense vittatus: pileo nigricante: capite laterali et gula albidis, hac olivaceo striata.

♂. *Stria superciliari et nucha lata cum macula rictali coccineis.*

♀. *Nucha solum angustiore coccinea.*

Long. tota 9·0, alæ 5·0, caudæ 3·4.

This bird is distinguishable at a glance from the southern *C. rubiginosus* (with which it is sometimes united) by its larger size and clear olive-green back. It is commonly known by Lichtenstein's MS. name.

202. Chloronerpes oleagineus, Reichb. Handb. d. Sp. Orn.—*P. oleagineus*, Licht. in Mus. Berol.

Sallé, no. 189, ♀.

Ex olivaceo-brunneus, dorso aurescentiore: capite et cauda nigricantioribus: capitis lateribus albidioribus: alis subtus nigris albo vittatis.

Long. tota 5·5, alæ 3·9, caudæ 2·4.

This Mexican species is very closely allied to, if not identical with, *C. fumigatus* of South America.

203. Picus scalaris, Wagler, Isis, 1829.—*Picus parvus*, Cabot, Journ. Boston N. H. Soc. v. p. 92.

Sallé, no. 25, ♂ et ♀.

The bird figured as *P. scalaris* in the Journ. Ac. Sc. Phil. (vol. i.

pl. 9. p. 55) is, I believe, not this species, but *Picus nuttalli*, Gambel (*Picus wilsoni*, Malherbe, R. Z. 1849, p. 529), distinguishable from the present by its larger size and purer white below.

204. Picus varius, Linn., Wils. Am. Orn. pl. 9. fig. 2.
Sallé, no. 24. Cordova, ♂ juv. aut ♀.

205. Picus jardinii, Malh. R. Z. 1845, p. 374 (teste Bp.).
Sallé, no. 23. El Jacale.

206. Picus cancellatus, Wagl. Isis, 1829, p. 510 (teste Bp.).
Sallé, no. 23 bis. San Andres, Suapam.

RAMPHASTIDÆ.

207. Ramphastos carinatus, Sw., Gould, Mon. Ramph. pl. 7, et ed. ii. pl. 2.
Sallé, no. 14. Cordova.

208. Aulacorhamphus prasinus, Gould, Mon. Ramph. ed. ii. pl. 47.
Sallé, no. 13. Cordova.

CUCULIDÆ.

209. Dromococcyx mexicanus, Bp. Compt. Rend. May 1856.
Sallé, no. 209. Cordova.

I agree with Prince Bonaparte that there is little difference between this and the Brazilian *D. phasianellus*. But M. Sallé's specimen is not quite adult, and, as the bird is not known to occur in intermediate localities, I think the species are likely eventually to turn out distinct.

210. Piaya mexicana (Sw.), Phil. Mag. 1827, p. 440 ?—*Piaya cayana*, Cassin, Pr. Ac. Sc. Phil. iv. p. 91.—*Coccyzus viridirostris*, Hartl. in Naumannia, ii. pt. vi. p. 55. — *Piaya viridirostris*, Bp. Compt. Rend. May 1856.
Sallé, no. 44. Cordova.

Mr. Cassin seems to consider this northern representative of *P. cayana* "precisely similar" to the S. American bird. Prince Bonaparte says it is an excellent species, and applies to it a name of the Prince of Wurtemburg, to which, I believe, no description has been attached, except that it is "*certainly distinct from the* cayana." According to what I consider *P. cayana* (i. e. Cayenne specimens), this species differs in its rather larger size, lighter throat, more cinereous chest and darker belly. The under surface of the tail is blacker (and not more rufous as Mr. Swainson says) than in the S. American bird.

I possess a similar example from Guatimala, and another, barely separable, from Bogota (*P. mehleri*, Bp. ?).

211. CROTOPHAGA SULCIROSTRIS, Sw. Phil. Mag. 1827, p. 440; Anim. in Menag. p. 322.

Sallé, no. 46. Cordova.

This bird is badly characterized in Swainson's original description, but well distinguished in the third part of his 'Animals in Menageries.' It may easily be recognized by the longitudinal grooves of the beak.

COLUMBÆ.

212. CHLORŒNAS FLAVIROSTRIS, Wagl. Isis, 1831, p. 410; Bp. Consp. ii. 52; Lawrence, Ann. Lyc. N. Y. v. p. 115.

Sallé, no. 31. Cordova.

213. CHLORŒNAS FASCIATA, Say, Bp. Consp. ii. p. 183.—*Col. monilis,* Vigors in Beechey's Voy. pl. 10.

Sallé, no. 183.

214. CHLORŒNAS SPECIOSA (Gm.).—*Lepidœnas speciosa,* Bp. Consp. ii. p. 54.

Sallé, no. 32. Cordova.

215. LEPTOPTILA RUFAXILLA (Rich. & Bern.), Bp. Consp. ii. p. 75.

Sallé, no. 33. Cordova, ♂ et ♀.

These specimens do not perfectly agree with the South American examples of *L. rufaxilla* in the British Museum. The nape is much bluer, the grey descending over the nape and the neck, which has no bronzy colouring. The sides of the head are paler, and shoulders somewhat lighter, and there is rather more white on the tail. The whole size is somewhat larger, and the wings and tail longer.

216. GEOTRYGON MONTANA (Linn.), Bp. Consp. ii. p. 72.

Sallé, no. 34. Cordova, ♂ et ♀.

217. PERISTERA CINEREA (Temm.), Bp. Consp. ii. p. 75.

Sallé, no. 37, ♂ et ♀. Cordova.

218. ZENAIDA LEUCOPTERA (Linn.).—*C. trudeauii,* Aud.

Sallé, no. 35. Cordova.

219. ZENAIDURA CAROLINENSIS (Linn.), Wils. Am. Orn. v. pl. 43. fig. 1; Bp. Consp. ii. p. 84.

Sallé, no. 36. Cordova.

220. SCARDAFELLA INCA (Less.), Bp. Consp. ii. p. 85.

Sallé, no. 38. Cordova.

ODONTOPHORINÆ.

221. ODONTOPHORUS GUTTATUS, Gould, Mon. Odont. pl. xxviii.

Sallé, no. 40. Cordova.

222. **Odontophorus thoracicus** (Gambel).— *Ortyx thoracicus*, Gambel, Pr. Ac. Phil. (1847). — *Odontophorus lineolatus*, Gould, Mon. Odont. pl. xxxii.

Sallé, no. 41. Cordova.

Mr. Gambel's name for this bird has every claim to preference over Natterer's unpublished MS. title.

223. **Ortyx pectoralis**, Gould, Mon. Odont. pl. v.

Sallé, no. 43. Cordova.

PENELOPINÆ.

224. **Ortalida poliocephala**, Wagl., Cassin, B. Cal. p. 267. pl. 44.

Sallé, no. 42. Cordova.

This seems to be the bird figured by Mr. Cassin as *O. poliocephala*, but is it not more like Wagler's *O. vetula*? Of this latter the describer says, "*cum specie præcedenti* (i. e. *O. vetula*) *simili non confundenda*"! *Vide* Isis, 1830, p. 1112.

TINAMIDÆ.

225. **Nothocercus sallæi**, Bp. Compt. Rend. May 1856.

Sallé, no. 225. Cordova.

ARDEIDÆ.

226. **Butorides virescens** (Linn.), Bp. Consp. ii. p. 128.

Sallé, no. 16. Cordova.

227. **Botaurus lentiginosus** (Mont.), Wils. Am. Orn. pl. 65. fig. 3.

Sallé, no. 15. Cordova.

SCOLOPACIDÆ.

228. **Gallinago wilsoni** (Temm.), Wils. Am. Orn. vi. pl. 47. fig. 1; Jard. Wils. Orn. ii. p. 220.

Sallé, no. 72.

229. **Totanus solitarius** (Wils.), Am. Orn. pl. 58. fig. 3.

Sallé, no. 74. Cordova.

230. **Tringoides** —— ?

Sallé, no. 212 bis.

An imperfect skin of a bird in immature state.

231. **Tringa pectoralis**, Say, Bp. Am. Orn. iv. pl. 23. fig. 2.

Sallé, no. 73. Cordova.

232. Tringa pusilla, Wilson, Am. Orn. v. p. 32; Aud. B. Am. 8vo, v. p. 280. pl. 337.
Sallé, no. 212.

233. Querquedula cyanoptera (Vieill.), Cassin, B. Cal. p. 82. pl. 15.

July 22, 1856.

Dr. Gray, F.R.S., in the Chair.

1. On a New Tanager of the Genus Calliste.
By Philip Lutley Sclater, M.A., F.Z.S. etc.

Mr. P. L. Sclater exhibited two specimens of a new Tanager of the genus *Calliste* (making a fifty-second species of that form) which he had just received from MM. Jules and Edouard Verreaux of Paris, and characterized it under the name of

Calliste rufigenis.

C. cærulescenti-viridis, interscapulio obscuriore: loris, capitis lateribus et regione auriculari cum mento summo rufis: alarum remigibus fusco-nigris, cupprescenti-viridi limbatis: cauda fusco-nigra virescente marginata: subtus virescentior quam supra, abdomine medio, tibiis et tectricibus subalaribus albescenti-ochraceis: crisso rufescenti-ochraceo: rostro et pedibus nigris.

Long. tota 5·0, alæ 2·7, caudæ 1·7.

Hab. Venezuela (*Verreaux*).

Remark.—This *Calliste* is rather noticeable for showing less decided tints of colouring than is usual in birds of this group. It may, I think, most naturally be placed next to *Calliste labradorides* (Boiss.), but it is readily distinguishable from that species and its congeners by the rufous ear-coverts and want of black colouring on the back.

2. Observations on the Pteropus of Australia.
By J. K. E. Fairholme.

The acquisition of a Flying Fox to the Gardens of the Society, induces me to bring before your notice a few observations I have made on the habits of this animal in the country about Moreton Bay, on the east coast of Australia, about lat. 27° south.

The flying fox is well known even in the southern parts of Australia in the summer months; but by far the largest flights are seen in the warmer latitudes. The attention is generally attracted to them (just as daylight disappears) by the heavy flapping sound of their wings, as they fly in great numbers overhead, all in the same direction. These flights often continue to pass for many hours together on the way to their feeding-places, generally about the banks of rivers, where the tree known as the Flooded-gum grows, on the leaves of which they feed. Though scattered over a large extent of country while feeding at night, they all contrive to assemble again to spend the heat of the day together, and when the flight is large, the scene of congregation is most extraordinary. I am fortunate enough to have known two of these places of assembly—one on a small island in Moreton Bay, covered with dense scrub or jungle; another in the scrub, close to my former residence, about forty miles inland from the Bay. In the latter spot the scrub consists of the usual undergrowth of smaller trees, mixed with *bush ropes*, or lianes, and overtopped by enormous Moreton Bay pine-trees (*Araucaria Cunninghami*). On the nearly horizontal branches of the pines, as well as on the lower trees around, the flying foxes hang in vast numbers. I can never forget my astonishment as I approached this spot for the first time, being taken to it for the purpose of shooting some of the animals for the natives. The space occupied by the flight was, as near as I could judge, about 400 or 500 yards square, and in this, every tree was more or less loaded with them, all hanging with their heads downwards, and uttering a sound difficult to describe, but not unlike that of young rooks when crying for food. All that were not snarling and fighting for places, were steadily fanning themselves with their wings half extended as they hung. On our approach, most of those nearest to us took to flight, only to alight again on the next tree, or to wheel round and round in the air above the spot. On my firing a shot, the din increased, and continued to such an extent, that after I had shot what the blacks required, I was glad to get away from it. Many had young ones clinging to them, and suckling at the breast. This flight met in the same spot for several days, and then disappeared. The flesh of the flying fox is like that of a rabbit in appearance, but is strongly flavoured by the food on which the animal feeds.

On the coast of Moreton Bay the natives live principally on fish, and the arrival of the flying foxes on the little island of St. Helena is hailed by them as a change of diet. The flights only appear in the warmer months of the year, even in lat. 26°, and most likely migrate into the tropical latitudes during the colder months, like many of our Australian birds.

At Moreton Bay there is no difficulty in procuring any number of young flying foxes, as the island on which they congregate is close to the anchorage for ships.

3. First Steps towards a Monograph of the Recent Species of Petaloconchus, a Genus of Vermetidæ.

By Philip P. Carpenter.

Genus Petaloconchus, Lea.

H. C. Lea, Trans. Am. Phil. Soc. 1843, vol. ix. p. 229 ; Woodw. Man. Moll. pt. iii. p. 462 ; B.M. Cat. Mazatlan Moll. p. 308.

Animal *ignotum.*

Operculum (speciebus ii.) *parvum, corneum, diaphanum, tenuissimum, parum concavum ; cicatrice centrali ; anfractibus paucis, vix apparentibus.*

Testa *extus* Bivoniæ *similis ; intus transversim rarissime septata ; anfractibus medianis laminis elongatis spiralibus varie dispositis, cameram sæpe pæne secantibus ; plerumque duabus, plica columellari una.*

Hab. Mare Mediterraneum ; Oceanum Atlanticum, Pacificum, Indicum.

Shell of corkscrew growth, glomerate, or single, affixed by one side of the whirls ; earlier and later whirls open ; middle whirls divided by spiral laminæ, often of complex structure, which gradually pass away at each end ; generally two, nearly meeting, with a third rudimentary, forming a columellar plait.

The elimination of the species is a work requiring great care ; as some outside exactly resemble certain species of *Bivonia* ; and as the internal structure varies according to the position in which the shell is broken, a few whorls often altering the character very decidedly. The structure was first observed by Lea in fossil species ; it was not noticed, however, in subsequent works till the publication of the third part of Woodward's Manual. In the mean time, having carefully observed the structure in the Mazatlan species, Dr. Gray kindly allowed me to examine the specimens in the British Museum collection, and Mr. Cuming entrusted to my care the suspected specimens among his invaluable stores. The result of these inquiries is now offered, simply as a provisional introduction to the subject ; in the hope that those who have the means of laying open specimens from top to bottom will do so, and especially that those who have access to them in a living state will inquire what peculiarity in the animal is co-ordinate with so remarkable a structure in the shell.

A. *Laminis ab axi procedentibus.*

1. **Petaloconchus macrophragma**, n. s. (fig. 1.)

B.M. Mazatlan Cat. no. 359. p. 309.

P. t. parva, dextrali, dense purpureo-fusca ; cylindracea, solute spirali, marginibus spiræ sæpe subparallelis ; plerumque glomerante, interdum solitaria ; basi ad conchas, seu altera ad alteram, constricte adhærente, sæpe erodente ; superficie rugis *irregularibus spiralibus haud extantibus, et rugulis incrementi ornata; intus, anfr. primis et ultimis quoad* iv. *apertis; mediis laminatis; lamina superiore multo majore, prius conspicua, a columella extante; primum simplici; dein angulo recto reflexa, extus carinis* i.–iii. *quarum* ii. *acutissimæ; lamina inferiore simplici, a columella extante, alteræ juxta carinam fere attingente; lamina tertia minima, intercalante, inferiori pæne attingente; laminis tenuissimis, albis, diaphanis, lineis incrementi conspicuis; pagina interna maxime nitente, transversim haud septato.*

Diam. spiræ ·23, aperturæ ·07.

Hab. Mazatlan; haud rare Uvanillis, Cumis, Muricibus, &c., adhærentes; *Reigen.* Panama. Mus. Cuming.

In this little species, the structure is the most delicate and complex of any of the species examined. For particulars v. B.M. Cat.

2. PETALOCONCHUS COCHLIDIUM, n. s. (fig. 2.)

P. t. irregulariter spirali, glomerata, anfr. plurimis confertis; spiræ marginibus fere parallelis; dense rubro-fusca; rugis spiralibus iii. *in basi aliis, interstitiis cancellatis, profunde interpunctatis; sculptura sæpe obsoleta; intus, laminis duabus ab axi procedentibus, tenuissimis; superiore majore, ad angulam obtusam curvata, carinis duabus validis labrum versus instructa; inferiore minore, alteram versus procedente, interstitio satis magno; lamina tertia parva intus super inferiorem sita.*

Diam. spiræ ·2, aperturæ ·08 poll.

Hab. Australia. Mus. Cuming.

This species is known from *P. macrophragma* by the upper lamina being bent at a more obtuse angle, and by the third lamina being proportionally large, growing out of the second. The shell is of a lighter colour, and of larger growth. Occasionally other small keels and plaits are seen. In one specimen (near the attachment of the locality ticket) occurs the extremely unusual appearance of a septum traversing the laminæ. Sometimes there is a false appearance of septa in shells of this genus, from other *Vermetidæ* growing in the same group, or from adventitious matter.

3. PETALOCONCHUS FLAVESCENS, ? n. s. (fig. 3.)

P. t. irregulariter spirali, glomerata, parva; anfractibus maxime confertis, marginibus spiræ subparallelis; rubido-flavescente; rugis spiralibus iii.–iv. *validis, transversis minoribus, confertis, interstitiis parum punctatis; sculptura interdum obsoleta; intus per maximam partem laminata, laminis duabus ab axi procedentibus, tenuissimis; superiore majore, fornicata; inferiore recta, interstitio magno; per anfractus paucos lamina superiore bicarinata, per anfr. pauciores lam. inferiore bifurcata, laminulis subparallelis.*

Diam. spiræ ·14, aperturæ ·06 poll.

Hab. Sicilia. Mus. Cuming.

This shell may have been already described by Phil. as a *Vermetus,* but as the *Bivoniæ* can hardly be discriminated from the *Petaloconchi* by external characters, it seemed presumptuous to attempt a union. Shell externally closely allied to *B. subcancellata*, Phil., from which it is principally known by the smaller size and stronger sculpture. Internally it most resembles *P. cochlidium*, from which it may be distinguished by the absence of keels on the upper lamina during a large part of the length; and by the general absence of the third plait, which, when it appears, is like another fold of the lower lamina in the same direction.

B. *Laminis a parietibus procedentibus.*

4. Petaloconchus varians?, D'Orb. (fig. 4.)

? An *Vermetus varians*, B.M. Cat. D'Orb. Moll. p. 47. no. 405.

P. t. nigro-fusca, irregulariter spirali; sculptura rugis spiralibus et rugulis transversis, plerumque haud valde expressis, variante; intus anfr. plurimis plicis solum instructa; in medio laminis duabus tenuibus a parietibus superiore et inferiore, parte axin versus, arcuatim procedentibus, æqualibus, haud valde approximatis, rarius extus reflexis; plica columellari centrali parva; pagina interna maxime nitente.

Diam. spiræ ·3, aperturæ ·08 poll.

Hab. St. Vincent's, W. I. (*W. B. Carpenter*); Honduras (*Dyson*); ? Brazils (*D'Orbigny*).

As far as can be judged from a partial examination of D'Orbigny's type specimen, this is his *Vermetus varians*, in which Dr. Gray found two opercula "orbicular, thin, nucleus central;" apparently paucispiral, like that of *Serpulorbis* made nearly flat. At the same time it is not safe to speak of shells of this genus without an examination of the whole length. The laminæ appear to degenerate into plaits during the principal part of their growth, but when developed closely approximate the next species.

5. Petaloconchus renisectus, n. s. (fig. 5.)

P. t. irregulariter spirali, axi lata, nigro-fusca; anfractibus rugis spiralibus et rugulis transversis, sæpe ad intersectiones nodosis, varie ornatis; laminis per anfr. plurimos continuis, duabus, æqualibus, tenuioribus, a parietibus, parte axin versus, procedentibus, arcuatim medium versus continuis, interstitio haud parvo, extus, labrum versus carinatis; camera externa majore, reniformi; plica una centrali, columellari.

Diam. spiræ ·4, aperturæ ·1 poll.

Hab. In Oceano ? Indico. Mus. Cuming.

Variat (*a*) *t. eleganter rugis spiralibus nodosa.*

Variat (*b*) quoque *sculptura pæne obsoleta.*

Hab. In Insulis Philippinarum; legit *H. Cuming.*

The species is described from a large group of very regular growth, of which the accretions warrant its being supposed East Indian. Specimens from the Philippines also appear not separable specifically.

It is known from *P. varians* by the much greater length of the laminæ, and, in its most developed part, by a strong keel on the outer edge of each, not seen in the portion sketched.

5 (*c*). PETALOCONCHUS? RENISECTUS, var. WOODWARDII.

P. t. P. renisecto *simili, sed multo minore, confertissima, axi compacta; vertice nucleoso Rissoideo; operculo parvo, dimidio aperturæ æquante, corneo, tenuissimo, extus parum concavo, paucispirali, cicatrice centrali.*

Diam. spiræ ·15, aperturæ ·06.

Hab. —— ? Sp. glom. in Mus. Cuming.

This specimen has the habit of a distinct species: nevertheless as the inner structure appears exactly the same, and as the shells are most compactly crowded, it appears probable that the small size is due to the circumstances of habitat. It will be observed that the operculum presents a type of structure very distinct from that of *Bivonia glomerata* and its congeners, as well as from *Vermetus*, and much more nearly related to *Siphonium*. As it agrees with that of *P. varians*, it is fair to conclude that the other species are not unlike. The opercula were so very frail, that after digestion in weak alkali to remove the animal matter, it was not found practicable to preserve them. This accounts for their absence from the other species.

6. PETALOCONCHUS NERINÆOIDES, n. s. (fig. 6.)

P. t. P. renisecto *simili; sed rubro-fusca, rugulis spiralibus pluribus; intus solida; laminis ut in* P. renisecto *sitis, sed validis, labrum versus sæpe biangulatis; camera externa minore.*

Diam. spiræ ·3, aperturæ ·1 poll.

Hab. Australia. Mus. Cuming.

Although the plan of structure is the same as in *P. reniformis*, yet the remarkable strength of the laminæ, smallness of the outer chamber, and difference of colour, appear to justify at least a temporary separation. In Mr. Cuming's group, the creatures have stretched their tubes so long that even the straight part is often found laminated; and transverse septa are seen at the other end. In some parts the body only occupies about a third of the section of the shell.

7. PETALOCONCHUS CEREUS, n. s. (fig. 7.)

P. t. haud parva, irregulariter spirali, cerea, solida, albida, aurantio tincta; anfractibus planatis, ad sedem angulatis, nodosis; laminis parietalibus tenuibus, curtis, in medio sitis, subperpendicularibus, parum arcuatis, interstitio haud parvo; camera externa majore; plica una parva columellari, in medio sita.

Diam. spiræ ·56, aperturæ ·18 poll.

Hab. In Insulis Philipinarum; legit *H. Cuming.* Sp. unic. in Museo suo.

This is the largest species as yet found, and very remarkable for its waxen aspect.

8. Petaloconchus octosectus, n. s. (fig. 8.)

P. t. irregulariter spirali; albida, seu flavido tincta; rugulis spiralibus et transversis vix sculpta; basi haud planata, haud nodosa; laminis ut in P. cereo *sitis, sed camera externa minore.*

Diam. spiræ ·38, aperturæ ·15 poll.

Hab. ? S. Africa. Mus. Cuming.

The section of this species (as of the last) resembles a figure 8. It differs from *P. cereus* in the absence of the remarkable structure at the base, and in the comparatively small size of the outer chamber.

9. Petaloconchus, sp. ind.

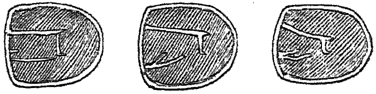
Hab. Tahiti. Mus. Cuming.

This specimen is sufficiently perfect to prove its genus; but not to describe as a species.

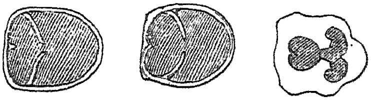
P. P. Carpenter.

July 11th, 1856.

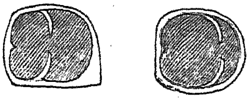
Sections of Petaloconchi *generally at greatest development.*



1. *macrophragma.* 2. *cochlidium.* 3. *flavescens.*



4. *varians.* 5. *renisectus.* 6. *nerinæoides.*



7. *cereus.* 8. *octosectus.*

The above are taken from sketches drawn by the eye only under the microscope. Where large groups had to be held in strange positions, it was not found practicable to use the camera, nor did I feel at liberty to break specimens not my own to obtain a favourable section. The figure of No. 5 contains the finest, of No. 6 the coarsest growth: each occasionally approaches the other. The difference between No. 7 and No. 8 is rather exaggerated in the latter.—P. P. C.

4. DESCRIPTIONS OF TWENTY-SEVEN NEW SPECIES OF LAND-SHELLS, COLLECTED BY M. SALLÉ IN THE STATE OF VERA CRUZ, MEXICO. BY DR. L. PFEIFFER.

(Mollusca, Pl. XXXV.)

1. **HELIX CORDOVANA**, Pfr. *H. testa umbilicata, depressa, tenui, undique subgranulata et breviter pilosa, cornea, superne fasciis 2 angustis, rufis cincta; spira plana; sutura profunda, canaliculata; anfr. $4\frac{1}{2}$ turgidis, sensim accrescentibus, ultimo supra peripheriam obsolete sulcato, antice descendente, subtus rotundato; umbilico $\frac{1}{4}$ diametri subæquante; apertura perobliqua, lunato-circulari; perist. tenui, marginibus conniventibus, supero expanso, basali reflexiusculo.*

Diam. maj. $12\frac{1}{3}$, min. $10\frac{1}{3}$, alt. 5 mill.
Hab. Cordova.

2. **HELIX VERACRUZENSIS**, Pfr. *H. testa umbilicata, depressa, tenerrima, striatula, pellucida, nitidissima, pallide rubello-cornea; spira parum elevata, vertice subtili; sutura subcrenulato-marginata; anfr. 5 vix convexiusculis, ultimo lato, non descendente, depresso-rotundato; umbilico pervio, $\frac{1}{6}$ diametri vix æquante; apertura obliqua, lunato-ovali; perist. recto, acuto, marginibus subconniventibus, columellari arcuato-declivi, vix reflexiusculo.*

Diam. maj. $12\frac{1}{2}$, min. $10\frac{1}{2}$, alt. 5 mill.
Hab. Cordova.

3. **BULIMUS SULPHUREUS**, Pfr. (Pl. XXXV. f. 11.) *B. testa anguste umbilicata, ovato-conica, tenuiuscula, striatula, striis spiralibus confertissimis decussata, nitida, pallide sulphurea; spira conica, apice acuta, concolore; anfr. $6\frac{1}{2}$ convexiusculis, ultimo spira breviore, basi rotundato; columella subrecedente; apertura obliqua, ovali; perist. simplice, tenui, margine dextro breviter expanso, superne sinuato, columellari triangulatim dilatato, reflexo.*

Long. 29, diam. 12 mill.
Hab. Cordova.

4. **BULIMUS CORIACEUS**, Pfr. *B. testa anguste perforata, ovato-conica, solidula, sub lente obsoletissime decussato-granulata, fusco-cornea, haud nitente; anfr. 6 convexiusculis, summis nigro-fuscis, sequentibus castaneo-fasciatis, ultimo spira breviore, obsolete angulato, basi subattenuato; columella arcuata; apertura parum obliqua, elliptico-ovali; perist. simplice, recto, margine columellari albido, nitido, fornicatim reflexo.*

Long. 18, diam. 9 mill.
Hab. Cordova.

5. **BULIMUS MARTENSI**, Pfr. *B. testa subperforata, turrito-oblonga, tenui, striatula et distanter chordato-costata, diaphana, albido-hyalina; spira turrita, obtusula; anfr. 6 convexis, ulti-*

mo $\frac{2}{5}$ longitudinis vix æquante, rotundato; columella medio subdentato-plicata; apertura parum obliqua, elliptico-ovali; perist. simplice, recto, margine columellari late reflexo, sublibero.
Long. 9$\frac{1}{3}$, diam. 4$\frac{1}{2}$ mill.
Hab. Cordova.

6. **Bulimus costato-striatus**, Pfr. *B. testa imperforata, turrita, tenui, conferte striata et costulis irregularibus munita, diaphana, cereo-hyalina; spira regulariter attenuata, acutiuscula; anfr. 7 convexiusculis, ultimo $\frac{2}{7}$ longitudinis formante, basi rotundato; columella substriata, filari; apertura vix obliqua, oblonga; perist. simplice, recto, marginibus subparallelis, columellari simplice.*
Long. 7$\frac{1}{2}$, diam. 2$\frac{1}{2}$ mill.
Hab. Cordova.

7. **Bulimus Drouëti**, Pfr. (Pl. XXXV. f. 12.) *B. testa subobtecte perforata, ovato-conica, tenui, ruguloso-striata (striis spiralibus obsoletissime decussata), pallide straminea, strigis et fasciis latis spadiceis interruptis ornata; spira conica, acutiuscula; anfr. 6 convexiusculis, ultimo spiram vix superante, antice subvaricoso; columella substricta, compressa; apertura obliqua, ovali; perist. tenui, expansiusculo, margine columellari dilatato, abrupte reflexo.*
Long. 24, diam. 10$\frac{1}{2}$ mill.
Hab. Cordova.

8. **Bulimus aurifluus**, Pfr. (Pl. XXXV. f. 10.) *B. testa perforata, ovato-conica tenui, sub lente minutissime decussata, nitida, albida, strigis angustis flexuosis fulvo-aureis ornata; spira convexiusculo-conica, acuta; anfr. 5$\frac{1}{2}$ convexiusculis, ultimo spiram paulo superante, juxta perforationem angustam subattenuato, unicolore lutescente; columella intrante, leviter arcuata; apertura vix obliqua, oblonga; perist. tenui, breviter expanso, margine columellari compresso, superne dilatato, reflexo.*
Long. 22, diam. 10 mill.
Hab. Cordova.

9. **Simpulopsis Salleana**, Pfr. (Pl. XXXV. f. 15, 16.) *S. testa subsemiovata, solidula, striatula, lineisque spiralibus impressis obsoletis notata, nitida, corneo-straminea; spira parvula, obtusa; anfr. vix 2$\frac{1}{2}$, ultimo magno, inflato; columella arcuata, subacuta; apertura perobliqua, lunato-rotundata, intus margaritacea; perist. simplice, marginibus callo tenuissimo junctis, dextro expansiusculo, antrorsum dilatato.*
Diam. maj. 15, min. 12, alt. 7$\frac{1}{2}$ mill.
Hab. Cordova.

10. **Simpulopsis Cordovana**, Pfr. *S. testa subsemiglobosa, tenuissima, levissime striatula, pellucida, nitidissima, virenti-*

cornea; spira minuta, vix prominula; sutura canaliculata; anfr. 2½, *ultimo inflato; columella tenui, papyraceo-marginata; apertura perobliqua, fere circulari; perist. simplice, recto, margine dextro superne antrorsum dilatato.*
Diam. maj. 15, min. 11⅔, alt. 7 mill.
Hab. Cordova.

11. **Spiraxis Shuttleworthi**, Pfr. (Pl. XXXV. f. 8.) *Sp. testa oblongo-glandiformi, tenuiuscula, lævigata, lineis impressis irregularibus notata, lucida, corneo-flavescente, strigis variciformibus virenti-fulvis notata; spira conica, obtusula; sutura levi, sublacera; anfr.* 7, *superis vix convexiusculis, ultimo antice descendente,* ⅔ *longitudinis fere æquante, basi subattenuato; lamina columellari leviter torta, subincrassata, basi vix truncatula; apertura anguste semiovali, superne longe acuminata, intus margaritacea; perist. simplice, marginibus callo tenui junctis, dextro medio dilatato.*
Long. 33, diam. 13½ mill.
Hab. Cordova.

12. **Spiraxis turgidula**, Pfr. (Pl. XXXV. f. 9.) *Sp. testa ovato-conica, tenuiuscula, striatula, nitida, pallide flavescente, strigis variciformibus, subimpressis, pellucidis notata; spira conica, obtusiuscula; sutura crenulata; anfr.* 8 *infra suturam turgidulis, ultimo* ⁴⁄₇ *longitudinis subæquante; lamina columellari crassa, alba, leviter torta, basi truncata; apertura subverticali, sinuoso-semiovali, intus albido-margaritacea; perist. simplice, margine dextro medio antrorsum dilatato.*
Long. 31, diam. 12½ mill.
Hab. Cordova.

13. **Spiraxis auriculacea**, Pfr. *Sp. testa fusiformi-oblonga, tenera, lævigata, pellucida, nitida, rubello-cornea; spira elongato-conica, obtusula; sutura marginata; anfr.* 7 *convexiusculis, ultimo spira vix longiore, infra medium dilatato; lamina columellari parum torta, alba, filari, minime truncata; apertura sinuato-semiovali, intus leviter margaritacea; perist. simplice, margine dextro medio fere angulatim producto.*
Long. 16, diam. 6 mill.
Hab. Cordova.

14. **Achatina (Varicella) Orizabæ**, Pfr. (Pl. XXXV. f. 6.) *A. testa oblongo-conica, solidula, longitudinaliter striata, nitida, olivaceo-fusca, varicibus subprominulis pallidis irregulariter munita; spira elongato-conica, apice obtusula; sutura levissime marginata; anfr.* 7½ *convexiusculis, ultimo spira breviore, deorsum læviore; columella subcallosa, arcuata, oblique truncata; apertura verticali, sinuato-ovali; perist. recto, margine dextro obtuso, vix flexuoso, pallide limbato.*
Long. 42, diam. 18 mill.
Hab. In Vulcano Orizaba.

15. Achatina (Varicella) speciosa, Pfr. (Pl. XXXV. f. 7.) *A. testa conico-ovata, solidula, longitudinaliter conferte plicata, nitida, carnea, varicibus sulciformibus, albidis, subflexuosis, irregulariter distantibus munita; spira conica, apice acutiuscula; sutura eleganter nodulato-crenata; anfr.* 8 *vix convexiusculis, ultimo spiram paulo superante, prope suturam turgidulo, deorsum sublævigato; columella arcuata, late truncata; apertura verticali, sinuato-semiovali; perist. recto, margine dextro flexuoso.*

Long. 29, diam. 13½ mill.
Hab. Cordova.

16. Achatina (Varicella) Cordovana, Pfr. *A. tes taturrito-oblonga, solidula, longitudinaliter plicata, nitida, alabastrina; spira elongato-conica, apice obtusa; sutura marginata, conferte nodulata; anfr.* 7½ *parum convexis, ultimo spira paulo breviore, varicibus nonnullis impressis, obsoletis munito, basi vix attenuato; columella substricta, transverse truncata; apertura subverticali, sinuato-semiovali; perist. simplice, margine dextro medio fere angulatim producto, subinflexo.*

Long. 20, diam. 6 mill.
Hab. Cordova.

17. Achatina margaritacea, Pfr. *A. testa oblonga, tenui, sublævigata, sub lente levissime et irregulariter plicatula, pellucida, nitida, lutescenti-hyalina; spira brevi, conica, acutiuscula; sutura subcanaliculata, marginata; anfr.* 5½ *convexiusculis, ultimo* ⅔ *longitudinis superante, basi vix attenuato; columella leviter arcuata, abrupte truncata; apertura verticali, acuminato-semiovali; perist. simplice, margine dextro leviter antrorsum arcuato.*

Long. 9⅓, diam. 3⅓ mill.
Hab. Cordova.

18. Achatina ambigua, Pfr. *A. testa imperforata, ovatoconica, solida, lævigata, opaca, albida; spira conica, obtusula; anfr.* 7 *convexis, ultimo spira paulo breviore, basi rotundato; columella verticali, subintorta, subtruncata; apertura verticali, trapezio-ovali; perist. recto, margine dextro subrepando, columellæ parallelo.*

Long. 22, diam. 10 mill.
Hab. Cordova.

19. Cylindrella Boucardi (Sallé, MSS.), Pfr. (Pl. XXXV. f. 1.) *C. testa arcuato-rimata, clavato-cylindracea, truncata, tenuiuscula, costulis capillaribus, confertis, subarcuatis munita, in interstitiis sub lente transverso-striata, corneo-fulva; sutura levi, vix marginata; anfr. superst.* 9–11 *vix convexis, ultimo antice soluto, oblique descendente, dorso angulato, infra medium obtuse carinato; apertura angulato-oblonga, plica*

valida, torta columellæ coarctata; perist. albo, breviter expanso.
Long. 52–56, diam. 13 mill.
Hab. Cordova.

20. Cylindrella apiostoma, Pfr. (Pl. XXXV. f. 4, 5.) *C. testa subrimata, subulata, subarcuatim striatula, diaphana, albidò-cornea; spira regulariter attenuata, apice integra, acutiuscula; anfr. 22–24 convexiusculis, ultimo breviter protracto, dorso angulato, antice distinctius striato; apertura subverticali, oblique piriformi; perist. albo, undique reflexiusculo, margine dextro superne subsinuoso.*
Long. 17, diam. 2⅓ mill.
Hab. Cordova.

21. Cylindrella polygyra, Pfr. (Pl. XXXV. f. 2, 3.) *C. testa profunde rimata, subulata, gracili, costulis filaribus, confertis, leviter arcuatis sculpta, opaca, cornea; spira regulariter attenuata, apice integra, acutiuscula; anfr. 24–27 convexis, ultimo breviter soluto, dorso et basi subcompresso; apertura vix obliqua, subcirculari, in fundo subtriangulari; perist. undique expanso et reflexiusculo.*
Long. 17½–21½, diam. 2½ mill.
Hab. Cordova.

22. Proserpina (Ceres) Salleana, Cuming. (Pl. XXXV. f. 21, 22.) *Pr. testa imperforata, conoidea, solidula, superne striis incrementi et granulis minutis exasperata, lutea vel rosea, epidermide opaca, albida, decidua, partim obducta; spira convexo-conoidea, mucronata; anfr. 8 vix convexiusculis, ultimo non descendente, medio compresse et acute carinato, basi convexo, lævigato, callo nitido, luteo magis minusve obducto; apertura perobliqua, subtriangulari, lamellis 6 coarctata; parietalibus 2, columellari 1 subtorta, 3 in pariete basali, mediana maxima; perist. luteo, subincrassato, obtuso.*
Diam. maj. 23, min. 21, alt. fere 12 mill.
Hab. Cordova.

23. Helicina Heloisæ, Sallé, MSS. (Pl. XXXV. f. 17.) *H. testa turbinato-globosa, solidula, levissime striatula, striis spiralibus sub lente obsolete decussata, nitida, subunicolore lutea vel cingulo purpurascente, sursum diluto ornata; spira convexo-conoidea, acuminata; sutura pallida; anfr. 6 convexis, ultimo peripheria vix subangulato, basi planiusculo, callo nitido, circumscripto munito; columella arcuata, filari; apertura diagonali, subsemicirculari; perist. tenuiusculo, expanso, margine dextro leviter flexuoso.*
Operc. ?—Diam. maj. 9⅔–11, min. 8½–9½, alt. 7–8 mill.
Hab. Cordova.

24. HELICINA NOTATA, Sallé, MSS. (Pl. XXXV. f. 18, 19, 20.) *H. testa globoso-turbinata, solidula, striata et liris subdistantibus, levibus circumdata, carnea vel straminea; spira convexiusculo-conica, acuta; anfr.* 5½ *vix convexiusculis, ultimo spiram subæquante, convexiore; columella brevi, basi tuberculata, callum crassum, circumscriptum retrorsum emittente; apertura fere diagonali, subsemicirculari; perist. calloso, incrassato, albo, angulatim patente.* — *Operc. tenue, margine externo purpureo.*

Diam. maj. 8⅓, min. 7, alt. 7 mill.

Hab. Cordova.

25. HELICINA CORDILLERÆ, Sallé, MSS. *H. testa depresse globoso-conica, solida, striatula, opaca, albida, fascia* 1 *rubra supra peripheriam, nonnullisque pallidioribus, obsoletis cincta; spira conoidea, sursum fusco-carnea, apice acuta; anfr.* 5½ *vix convexiusculis, ultimo depresse rotundato; columella extus vix impressa, callosa, basi in nodulum terminata, callum emittente crassiusculum, circumscriptum; apertura diagonali, triangulari-semiovali; perist. calloso-incrassato, angulatim patente, margine basali in tuberculum columellæ transeunte.*—*Operc. corneum, castaneum.*

Diam. maj. 12⅓, min. 10⅔, alt. 8 mill.

β. *Paulo major, unicolor fusco-carnea, impressione columellari distinctiore.*

Hab. In monte Orizaba, 12,000′ supra Oceanum.

26. CYCLOSTOMA (CYCLOPHORUS) BOUCARDI, Sallé, MSS. (Pl. XXXV. f. 25.) *C. testa latiuscule umbilicata, conoideo-depressa, solida, impressionibus malleatis undique tuberculato-rugosa et liris obsoletis distantibus munita, epidermide fulva, saturatius fasciata vestita; spira breviter conoidea, obtusa; anfr.* 5 *modice convexis, celeriter accrescentibus, ultimo rotundato, antice interdum breviter soluto; apertura parum obliqua, subangulato-ovali, intus margaritacea; perist. simplice, recto, continuo, superne obsolete angulato, margine columellari leviter arcuato.*—*Operc. tenuissimum, fulvum, planum.*

Diam. maj. 36, min. 30, alt. 18–19 mill.

Hab. Cordova.

27. CYCLOSTOMA (CHONDROPOMA) CORDOVANUM, Pfr. *Ch. testa rimato-perforata, turrita, integra, tenui, longitudinaliter confertim plicata, haud nitente, pallide fulva, fasciis interruptis castaneis ornata; spira regulariter turrita, sursum plerumque violacea, apice submamillari nitida, cornea; anfr.* 7–7½ *perconvexis, ultimo non soluto; apertura verticali, ovali; perist. duplice; interno albo, breviter porrecto, externo subdilatato,*

horizontaliter patente, concentrice striato, castaneo maculato, superne producto, ad anfr. penultimum subexciso.—Operc. albidum.

Long. 13–$15\frac{1}{2}$, diam. 6–$7\frac{1}{3}$ mill.
Hab. Cordova.

DESCRIPTION OF PLATE XXXV.

Fig. 1. Cylindrella Boucardi, *Pfr.*
2, 3. —— polygyra, *Pfr.*
4, 5. —— apiostoma, *Pfr.*
6. Achatina (Varicella) Orizabæ, *Pfr.*
7. —— (Varicella) speciosa, *Pfr.*
8. Spiraxis Shuttleworthi, *Pfr.*
9. —— turgidula, *Pfr.*
10. Bulimus aurifluus, *Pfr.*
11. —— sulphureus, *Pfr.*
12. —— Drouëti, *Pfr.*
13, 14. Helix caduca and var., *Pfr.*
15, 16. Simpulopsis Salleana, *Pfr.*
17. Helicina Heloisæ, *Sallé.*
18, 19, 20. —— notata and var., *Pfr.*
21, 22. Proserpina (Ceres) Salleana, *Cuming.*
23, 24. —— eolina, *Duclos* (for comparison).
25. Cyclophorus Boucardi, *Sallé.*

5. DESCRIPTIONS OF FIFTY-EIGHT NEW SPECIES OF HELICEA FROM THE COLLECTION OF H. CUMING, ESQ.

BY DR. L. PFEIFFER.

1. VITRINA FLEMINGI, Pfr. *V. testa subdepressa, peripheria auriformis; solidula, superne plicato-striata striisque spiralibus sub lente notata, æneo-micante, olivaceo-fulva; spira parum elata; sutura anguste albomarginata; anfr. $4\frac{1}{2}$ convexiusculis, ultimo magno, infra medium obsoletissime angulato, basi lævigato, nitidiore; apertura diagonali, lunato-ovali, intus margaritacea; perist. simplice, margine dextro subrepando, columellari arcuato, superne triangulatim reflexo, adnato.*

Diam. maj. 33, min. 24, alt. 17–18 mill.
Hab. Scinde, India (*Dr. Alex. Fleming*).

2. VITRINA PLANTI, Pfr. *V. testa depressa, ambitu subauriformi, tenuissima, lævigata, nitidissima, pellucida, albido-hyalina; spira parvula, plana; sutura vix impressa, submarginata; anfr. vix 3 planiusculis, ultimo magno, superne vix convexiore, ad suturam striatulo, subtus inflato, membranaceo-marginato; apertura magna, diagonali, lunato-ovali; perist. simplice, margine dextro antrorsum arcuato, columellari tenuissima.*

Diam. maj. 12, min. 8, alt. 6 mill.
Hab. Natal (*Mr. Plant*).

3. VITRINA BORNEENSIS, Pfr. *V. testa depresso-globosa, tenuissima, striatula, striis spiralibus nonnullis impressis notata, pellu-*

cida, pallide cornea; spira brevissime conoidea, albida; sutura submarginata; anfr. 4 *celeriter accrescentibus, superis vix convexis, ultimo subdepresso-rotundato, basi oblique ruguloso; apertura obliqua, lunato-rotundata; perist. simplice, levissime inflexo, margine columellari brevi, strictiusculo, filari.*
Diam. maj. 15, min. 11⅔, alt. 9 mill.
Hab. Borneo.

4. Vitrina Celebensis, Pfr. *V. testa helicoidea, solidula, striatula, nitida, coffeacea; spira breviter conoidea, obtusula; sutura pallide marginata; anfr.* 4 *convexiusculis, sensim accrescentibus, ultimo basi parum convexo, pallido; apertura diagonali, lunato-rotundata; perist. simplice, recto, marginibus subconvergentibus, columellari arcuato, subcalloso.*
Diam. maj. 11½, min. 9, alt. 7 mill.
Hab. Celebes (*Mrs. Ida Pfeiffer*).

5. Vitrina Idæ, Pfr. *V. testa depresso-globosa, ambitu subovali, tenui, arcuato-striatula, nitida, pellucida, lutescenti-cornea; spira vix elevata; sutura levi; anfr.* 4 *convexiusculis, ultimo magno, inflato, basi non impresso; apertura diagonali, rotundato-lunari; perist. simplice, marginibus conniventibus, regulariter arcuatis, columellari brevissime recedente, subcalloso.*
Diam. maj. 14, min. 11, alt. 7⅔ mill.
Hab. Celebes (*Mrs. Ida Pfeiffer*).

6. Vitrina? Comorensis, Pfr. *V. testa subglobosa, tenui, rugoso-striata, vix nitidula, diaphana, virenti-cornea, punctis et strigis luteis variegata; spira convexa, obtusa; anfr.* 3 *convexis, rapide accrescentibus, ultimo inflato; apertura fere diagonali, lunato-ovali, intus margaritacea, albo variegata; perist. simplice, recto, marginibus convergentibus, regulariter arcuatis, columellari filari.*
Diam. maj. 21½, min. 16½, alt. 13–14 mill.
Hab. Mayotte, Comoro Islands (*Mr. Cloué*).
Shape very similar to that of *Helix aperta*, Born.

7. Vitrina Darnaudi, Pfr. *V. testa semiovata, pertenui, sub lente irregulariter striatula punctisque impressis notata, oleoso-micante, pallide virenti-cornea; spira convexa, obtusa; sutura anguste marginata; anfr. vix* 3 *convexis, rapide accrescentibus, ultimo magno; apertura subdiagonali, sublunato-ovali, intus leviter margaritacea; perist. simplice, brevissime inflexo, marginibus approximatis, dextro antrorsum dilatato, columellari arcuato, anguste membranaceo-marginato.*
Diam. maj. 16, min. 12, alt. 7½ mill.
Hab. Sennaar, Interior of Africa (*Mr. Darnaud*).

8. Vitrina Sennaariensis, Pfr. *V. testa depressa, tenui, oblique rugosa, nitidula, pellucida, corneo-virente, plerumque luteo*

nigro obducta ; spira subturbinata, mucronata ; anfr. 3 convexis, sensim accrescentibus, ultimo depresso, peripheria obsolete angulato ; apertura perobliqua, lunato-circulari ; perist. tenui, subinflexo, marginibus convergentibus, columellari vix dilatato.

Diam. maj. $6\frac{2}{3}$, min. $5\frac{1}{3}$, alt. 3 mill.
Hab. Sennaar, Interior of Africa (*Mr. Darnaud*).

9. Vitrina leucospira, Pfr. *V. testa depresse subglobosa, ambitu ovali, tenuissima, striatula, pellucida, nitida, lutescenti-hyalina ; spira parum convexa, alba ; sutura vix submarginata ; anfr. 4 convexiusculis, penultimo sensim pellucido-radiato, ultimo rotundato ; apertura obliqua, lunato-subcirculari ; perist. tenui, marginibus conniventibus, subinflexis, dextro antrorsum valde arcuato, columellari substricto, brevi, filari.*

Diam. maj. $13\frac{1}{2}$, min. $11\frac{1}{2}$, alt. $8\frac{1}{2}$ mill.
Hab. Australia.

10. Succinea Planti, Pfr. *S. testa conico-ovata, tenuiuscula, rugulosa, diaphana, sordide cornea ; spira brevi, subpapillata ; anfr. vix $2\frac{1}{2}$, penultimo convexo, ultimo $\frac{2}{3}$ longitudinis superante, medio turgido ; columella substricte recedente, superne levissime calloso-plicata ; apertura fere diagonali, ubique incumbente, acuminato-ovali ; perist. simplice, margine dextro regulariter arcuato.*

Long. 5, diam. $3\frac{1}{2}$, alt. $2\frac{2}{3}$ mill.
Hab. Cape Natal (*Mr. Plant*).

11. Succinea asperula, Pfr. *S. testa ovato-conica, tenuiuscula, striis rugosis subasperata, diaphana, corneo-rubella ; spira turbinata, acuta ; anfr. $3\frac{1}{2}$ convexis, ultimo ventroso, $\frac{2}{3}$ longitudinis formante ; columella leviter arcuata, compressa, albida ; apertura oblique, undique incumbente, subregulariter ovali, intus margaritacea ; perist. simplice, marginibus subsymmetricis.*

Long. $10\frac{2}{3}$, diam. $6\frac{1}{3}$, alt. 5 mill.
Hab. Flagstaff Hill, St. Helena.

12. Helix Kermandeci, Pfr. *H. testa imperforata, turbinata, tenui, superne subdistanter striata, hyalina ; spira convexiusculo-turbinata, subacuminata ; anfr. $5\frac{1}{2}$–6 convexis, lente accrescentibus, ultimo subangulato, antice rotundato ; apertura vix obliqua, lunari ; perist. simplice, recto, marginibus distantibus, columellari superne subreflexo, adnato.*

Diam. maj. $3\frac{2}{3}$, min. $3\frac{1}{3}$, alt. $2\frac{1}{2}$ mill.
Hab. Sunday Island, Kermandec Group (*Lieut. Chimmo, R.N.*).

13. Helix Ophiria, Pfr. *H. testa subperforata, depresse turbinato-globosa, tenuissima, membranacea, radiato-rugata et lineis spiralibus minutissimis sub lente sculpta, pellucida, virenti-cornea ; spira subconoidea, superne alba ; anfr. 5 convexiusculis, sensim accrescentibus, ultimo peripheria subangulato, antice rotundato, basi inflato ; apertura fere diagonali, rotundato-lunari ; perist.*

simplice, marginibus dextro et basali subinflexis, columellari fere verticali, superne subreflexo.
Diam. maj. 20, min. 17, alt. 11½ mill.
Hab. Mount Ophir, Malacca (*Dr. Traill*).
Vitrina heliciformis, Pfr. 1854, is an imperfect form of this species.

14. **Helix Shiplayi**, Pfr. *H. testa perforata, subturbinata, solidula; superne arcuato-plicata striisque spiralibus eleganter granulata, isabellina; spira convexiusculo-conica, obtusula; sutura subcanaliculata; anfr.* 6 *convexis, lente accrescentibus, ultimo peripheria carina acuta, compressa, antice evanescente munito, basi convexo, læviore; apertura diagonali, subangulato-lunari, intus margaritacea; perist. simplice, obtusulo, margine columellari fere verticali, superne triangulatim reflexo.*
Diam. maj. 20, min. 18, alt. 11½ mill.
Hab. Neilgherries, India (*Mr. Conway Shiplay*).

15. **Helix acalles**, Pfr. *H. testa vix perforata, turbinata, tenui, oblique rugosa, diaphana, pallide cornea; spira conoidea, acutiuscula; anfr.* 5½ *convexiusculis, sensim accrescentibus, ultimo peripheria carinato, antice non descendente, basi convexiore; apertura obliqua, subangulato-lunari; perist. simplice, recto, margine columellari superne anguste reflexo.*
Diam. maj. 13, min. 11, alt. 7½ mill.
Hab. Neilgherries, India (*Mr. Conway Shiplay*).

16. **Helix Calabarica**, Pfr. *H. testa perforata, turbinato-lentiformi, tenui, lævigata, superne liris* 6 *argutis, filiformibus cincta, diaphana, cornea; spira conoidea, acutiuscula; anfr.* 6 *convexiusculis, sensim accrescentibus, ultimo non descendente, acute carinato, basi convexo; apertura parum obliqua, angulato-lunari; perist. simplice, recto, marginibus vix convergentibus, columellari arcuato, superne vix reflexo.*
Diam. maj. 9½, min. 8⅓, alt. 4½ mill.
Hab. Old Calabar, Guinea.

17. **Helix Darnaudi**, Pfr. *H. testa perforata, depresse conoideo-globosa, tenui, rugoso-striata, cornea, fasciis opacis albidis notata; spira conoidea; anfr. fere* 5 *vix convexiusculis, sensim accrescentibus, ultimo non descendente, rotundato; apertura vix obliqua, rotundato-lunari; perist. simplice, recto, marginibus subconvergentibus, columellari superne dilatato, patente.*
Diam. maj. 8, min. 7, alt. 5 mill.
Hab. Sennaar, Interior of Africa (*Mr. Darnaud*).

18. **Helix arguta**, Pfr. *H. testa subclause perforata, depressa, tenui, superne argute et confertim arcuato-striata, corneo-fusca; spira parum elevata, obtusa; sutura subcrenulata; anfr.* 4½ *celeriter accrescentibus, superis vix convexiusculis, ultimo peripheria carina fusiformi cincto, antice non descendente, basi læviore, luteovirente, medio excavato; apertura diagonali, ampla, lunato-ro-*

tundata, intus margaritacea; perist. simplice, recto, marginibus conniventibus, columellari superne in laminam brevem callosam reflexo.

Diam. maj. 36, min. 29, alt. 18 mill.

Hab. Tenga Hills, Java (*C. Shiplay, Esq.*).

19. Helix Chimmoi, Pfr. *H. testa umbilicata, convexo-depressa, tenuiuscula, confertim plicato-striata, cornea, rufo irregulariter maculata; spira parum elevata; anfr.* 5 *convexis, sensim accrescentibus, ultimo non descendente, subdepresso-rotundato; umbilico conico,* $\frac{1}{3}$ *diametri subæquante; apertura parum obliqua, rotundato-lunari; perist. simplice, recto, marginibus convergentibus.*

Diam. maj. $3\frac{2}{3}$, min. 3, alt. $1\frac{1}{2}$ mill.

Hab. Sunday Island, Kermandec Group (*Lieut. Chimmo, R.N.*).

20. Helix conferta, Pfr. *H. testa umbilicata, conoidea, solida, striis incrementi irregularibus et confertissimis spiralibus decussatula, sericea, fulvida; spira conoidea, obtusa; sutura pallide marginata; anfr. vix* 5 *convexiusculis, sensim accrescentibus, ultimo peripheria angulato, ad suturam turgidulo, basi convexo, juxta umbilicum angustum compresso; apertura perobliqua, subtetragono-lunari; perist. obtuso, margine supero recto, basali incrassato, reflexiusculo, columellari declivi, subdentato, superne triangulatim reflexo.*

Diam. maj. $34\frac{1}{2}$, min. 30, alt. 20 mill.

Hab. ——?

21. Helix Damahoyi, Pfr. *H. testa imperforata, globoso-depressa, tenuiuscula, oblique striata, parum nitente, saturate fusca, fasciis latis nigris, unica lutea mediana et superpositis nonnullis hydrophanis albidis ornata; spira vix elevata, obtusa; anfr.* 4 *convexiusculis, rapide accrescentibus, ultimo inflato, oblique malleato-plicato; columella declivi, compressa, dilatata, alba; apertura obliqua, truncato-ovali, intus albida; perist. albo, late expanso et reflexiusculo.*

Diam. maj. 47, min. 37, alt. 28 mill.

Hab. Philippine Islands (*Mr. Damahoy*).

22. Helix Meobambensis, Pfr. *H. testa obtecte umbilicata, conoideo-depressa, solida, subdistanter rugoso-striata, undique minute granulata, cinnamomea; spira conoideo-convexa, obtusa; anfr.* 5 *planiusculis, lente accrescentibus, ultimo antice descendente, peripheria subcarinato, utrinque convexiore; apertura perobliqua, tetragono-lunari; perist. albo, reflexo, marginibus callo junctis, columellari dilatato, adnato, stricto, ad dextram unidentato.*

Diam. maj. 32, min. 26, alt. 15 mill.

Hab. Meobamba, Peru (*Mr. Porte*).

23. Helix ammiralis, Pfr. *H. testa umbilicata, turbinato-de-*

pressa, solidula, undique subruditer striata, fulva vel lutescente, plerumque fascia unica peripherica nigro-castanea ornata; spira regulariter conoidea; anfr. 6½ *vix convexiusculis, lente accrescentibus, ultimo antice vix descendente, peripheria carinato, basi convexo, circa umbilicum angustum, castaneum subcompresso; apertura obliqua, lunari; perist. hepatico, breviter expanso, margine columellari superne fornicatim reflexo.*
Diam. maj. 36, min. 33, alt. 20 mill.
Hab. China (*Admiral Cecille*).

24. HELIX MUCIDA, Pfr. *H. testa umbilicata, turbinato-depressa, tenuiuscula, striatula, saturate rufa, quasi mucore obducta; spira conoidea, obtusula; anfr.* 5 *convexis, sensim accrescentibus, ultimo rotundato, antice descendente, circa umbilicum infundibuliformem subangulato; apertura fere diagonali, rotundato-lunari, intus nitida, carnea; perist. breviter expanso, marginibus vix convergentibus, columellari superne triangulatim dilatato, patente.*
Diam. maj. 20, min. 16⅔, alt. 11 mill.
Hab. Percy's Island (*Lieut. Chimmo, R.N.*).

25. HELIX GUEINZII, Pfr. *H. testa umbilicata, depressa, carinata, tenui, plicis subdistantibus retrorsum descendentibus sculpta, pellucida, pallide cornea, seriebus macularum rufarum ornata; spira vix elevata; anfr.* 5 *sensim accrescentibus, prope suturam turgidis, ultimo superne subacute carinato, antice non descendente, subtus perinflato, circa umbilicum* (⅙ *diametri occupantem*) *conicum lævigato, subangulato; apertura vix obliqua, subangulato-lunari; perist. tenui, undique breviter expanso, margine columellari superne dilatato, patente.*
Diam. maj. 20, min. 16, alt. 9 mill.
Hab. Meobamba, Peru (*Mr. Gueinzius*).

26. HELIX BASIDENTATA, Pfr. *H. testa umbilicata, conoideo-subsemiglobosa, solida, oblique striata, alba, fasciis* 2 *castaneis et* 1 *angustiore aurantiaca prope suturam ornata; spira convexo-conoidea, obtusa; anfr.* 5 *convexis, sensim accrescentibus, ultimo carinato, antice perdeflexo, basi planiusculo; umbilico angusto, pervio; apertura horizontali, elliptica; perist. continuo, undique reflexo, margine basali medio dente* 1 *valido, obtuso armato.*
Diam. maj. 26, min. 20, alt. 11 mill.
Hab. Philippine Islands.

27. BULIMUS PHÆOSTYLUS, Pfr. *B. testa imperforata, oblongo-ovata, tenui, oblique confertim striata, pallide fulvescenti-carnea, fasciis* 3 *nigricantibus* (1 *suturali,* 1 *infraperipherica, tertia columellari*) *ornata; spira convexo-conica, apice obtusula, nigro-violacea; anfr.* 5 *modice convexis, sensim accrescentibus, ultimo spira paulo breviore; columella compressa, plana, fusca, basi*

subtruncata; apertura obliqua, truncato-oblonga; perist. castaneo, anguste reflexo.
Long. 37, diam. 24 mill.
Hab. Philippine Islands.

28. Bulimus inæqualis, Pfr. *B. testa anguste umbilicata, oblique fusiformi, tenuiuscula, lævigata, nitida, alba unicolore vel strigis latis ramosis violaceo-nigricantibus picta; spira gracili, conica, acuta; anfr. 6 vix convexiusculis, ultimo spira longiore, antice subascendente, latere aperturali planulato, basi subattenuato; apertura subverticali, elongato-auriformi, intus violaceo-limbata; columella violacea, superne oblique plicata; perist. albo, late expanso, margine columellari plano, patente, superne flexuoso.*
Long. 43, diam. 13 mill.
Hab. Banks of the Maranhon.

29. Bulimus Gueinzii, Pfr. *B. testa profunde rimata, oblongo-conica, tenui, sublævigata, nitida, albida, strigis angustis fuscis, basin versus undulatis, ornata; spira conica, acutiuscula; anfr.* 6 *convexiusculis, ultimo spira vix breviore, basi subattenuato, ad rimam violaceo; columella compressa, subtorta, violacea; apertura vix obliqua, truncato-oblonga, intus lilacina; perist. tenui, margine dextro superne valde curvato, late expanso, columellari patente.*
Long. 23, diam. 10 mill.
Hab. Meobamba, Peru (*Mr. Gueinzius*).

30. Bulimus clarus, Pfr. *B. testa rimato-umbilicata, ovato-oblonga, tenui, lævigata, nitida, diaphana, sub epidermide fugace fulvescente-albida; spira elongata, convexo-conica, obtusula; anfr.* $5\frac{1}{2}$ *modice convexis, ultimo* $\frac{2}{7}$ *longitudinis subæquante, basi rotundato; columella leviter arcuata; apertura obliqua, truncato-ovali; perist. tenui, marginibus conniventibus, dextro breviter expanso, columellari dilatato, patente.*
Long. 16, diam. $7\frac{2}{3}$ mill.
Hab. Meobamba, Peru (*Mr. Gueinzius*).

31. Bulimus lactifluus, Pfr. *B. testa breviter rimato-perforata, fusiformi-turrita, tenuiuscula, sublævigata, cornea, strigis lacteis subserratis notata; spira turrita, apice acutiuscula, sæpe nigro-cornea; anfr.* 10–11 *convexiusculis, ultimo* $\frac{2}{7}$ *longitudinis subæquante, basi attenuato, compresso; columella leviter arcuata; apertura vix obliqua, ovali-oblonga; perist. tenui, margine dextro anguste expanso, columellari a basi dilatato, fornicatim reflexo.*
Long. $16\frac{1}{2}$–17, diam. $4\frac{2}{3}$ mill.
Hab. Chili.

32. Bulimus Floridanus, Pfr. *B. testa anguste perforata, ovato-turrita, sublævigata, griseo-hyalina, strigis et maculis opacis, albis notata; spira elongato-conica, acutiuscula; anfr.* $6\frac{1}{2}$ *convexiusculis, superis interrupte fusco-fasciatis, ultimo* $\frac{3}{7}$ *longi-*

tudinis subæquante, infra medium subangulato, basi attenuato; columella subtorta, recedente; apertura parum obliqua, ovali; perist. tenui, margine dextro anguste expanso, columellari dilatato, reflexo, fere adnato.
Long. $15\frac{2}{3}$–17, diam. $7\frac{1}{2}$ mill.
Hab. Florida.

33. Bulimus distans, Pfr. *B. testa compresse umbilicata, ovato-conica, tenuiuscula, costis subarcuatis, chordæformibus subdistantibus sculpta, subdiaphana, albida; spira elevato-conica, obtusula; anfr. 7 convexis, ultimo $\frac{3}{7}$ longitudinis subæquante, basi rotundato; columella profunde subtorta; apertura parum obliqua, acuminato-subovali; perist. tenui, marginibus convergentibus, dextro breviter expanso, columellari dilatato, patente.*
Long. $22\frac{1}{2}$, diam. $10\frac{1}{2}$ mill.
Hab. Isle of Karah, Gulf of Persia.

34. Bulimus æstivus, Pfr. *B. testa umbilicata, oblongo-turrita, solidula, irregulariter striata, albida; spira elongata, convexiusculo-conica, acutiuscula; anfr. 6 modice convexis, ultimo $\frac{3}{7}$ longitudinis subæquante, basi vix attenuato; columella subrecedente; apertura parum obliqua, acuminato-ovali; perist. tenui, margine dextro anguste expanso, columellari dilatato, fornicatim reflexo.*
Long. 17, diam. $7\frac{1}{3}$ mill.
Hab. Meobamba, Peru (*Mr. Gueinzius*).

35. Bulimus Charbonnieri, Pfr. *B. testa profunde rimata, ovato-conica, tenuiuscula, confertim costulato-striata, diaphana, corneo-albida; spira elevato-conica, obtusa; anfr. 6 convexiusculis, ultimo spira paulo breviore, juxta umbilicum rimæformem subcompresso; columella substricta; apertura parum obliqua, elliptico-ovali; perist. tenui, marginibus approximatis, dextro perarcuato, breviter expanso, columellari sursum dilatato, patente.*
Long. 15, diam. 8 mill.
Hab. Isle of Karah, Gulf of Persia.

36. Bulimus Tibetanus, Pfr. *B. testa profunde rimata, ovato-oblonga, pupæformi, solidula, striatula, albida, strigis et maculis corneis irregulariter notata; spira subcylindrica, sensim in conum obtusulum attenuata; anfr. 8–$8\frac{1}{2}$ vix convexiusculis, ad suturam plicatulis, ultimo $\frac{1}{3}$ longitudinis subæquante, antice ascendente, basi compresso; columella subplicata; apertura verticali, sinuato-ovali; perist. albolabiato, expanso, marginibus callo subjunctis, columellari reflexiusculo.*
Long. 32, diam. 11 mill.
Hab. Tibet.

37. Bulimus Cochinchinensis, Pfr. *B. testa imperforata, fusiformi-ovata, solida, lævigata, nitida, pallide sulphurea vel albida; spira convexiusculo-turrita, apice obtusula; sutura levi, pallida; anfr. 6–7, superis planiusculis, sequentibus convexiori-*

bus, ultimo $\frac{2}{5}$ longitudinis subæquante, basi attenuato, subcompresso; columella funiformi, leviter torta; apertura parum obliqua, elliptico-ovali; perist. subincrassato, margine dextro breviter expanso, columellari dilatato, adnato.

Long. 39, diam. 17 mill.

Hab. Cochin China.

38. Bulimus chion, Pfr. *B. testa perforata, oblonga, solida, striatula, alba; spira elongata, in conum acutiusculum terminata; anfr.* 7–8 *modice convexis, ultimo $\frac{1}{3}$ longitudinis paulo superante, antice subascendente, basi rotundato; apertura verticali, ovato-lunari; perist. calloso, marginibus callo junctis, columellari brevi, substricto, dilatato, patente.*

Long. 12, diam. 5½ mill.

Hab. India; Punjaub, Kurrachee, mouth of the Indus (*Mr. Conway Shiplay*).

39. Bulimus Kanaiensis, Pfr. *B. testa subperforata, conico-ovata, solidula, striatula et irregulariter malleato-impressa, alba; spira conica, sursum interdum grisea, apice obtusa; anfr.* 5 *convexis, ultimo spiram vix superante, oblique descendente, basi rotundata; columella vix arcuata; apertura obliqua, truncato-ovali; perist. simplice, recto, margine columellari dilatato, reflexo, subappresso.*

Long. 14, diam. 8 mill.

Hab. Kanai, Sandwich Islands.

40. Bulimus Lorraini, Pfr. *B. testa subperforata, ovato-conica, tenui, rugata, subepidermide fulvida, glutinosa, alba; spira convexiusculo-conica, obtusula; anfr.* 4 *convexis, ultimo spiram paulo superante, basi parum attenuato; columella compressa, leviter arcuato; apertura obliqua, acuminato-ovali, intus margaritaceo-albida; perist. simplice, recto, margine columellari anguste reflexo, subadnato.*

Long. 20, diam. 9 mill.

Hab. Isle of Penang (*Mr. Lorrain*).

41. Bulimus Woodwardi, Pfr. *B. testa perforata, ovato-turrita, solidula, striata et submalleata, nitidula, fulvido-alba; spira elongato-conica, acutiuscula; anfr.* 8 *convexiusculis, ultimo spira paulo breviore, basi subattenuato; columella recedente; apertura obliqua, ovali-oblonga; perist. simplice, recto, margine dextro leviter arcuato, columellari sursum dilatato, fornicatim reflexo, perforationem angustam semitegente.*

Long. 31, diam. 13½ mill.

Hab. Andes of Peru.

42. Bulimus Castelneaui, Pfr. *B. testa subperforata, fusiformi-turrita, tenuiuscula, striatula (sub lente decussatula), nitida, griseo-albida, punctis raris pellucidis conspersa; spira elongato-conica, apice acuta, cornea; anfr.* 7½ *convexiusculis, ultimo $\frac{2}{5}$ lon-*

gitudinis subæquante, basi attenuato; columella substricta; apertura obliqua, oblonga, intus carnea; perist. simplice, recto, margine columellari sursum dilatato, fornicato-reflexo.

Long. 20, diam. 8½ mill.

Hab. Rio Pampas, Bolivia (*Mr. Castelneau*).

43. Bulimus nigroapicatus, Pfr. *B. testa perforata, ovato-conica, tenuiuscula, striata, nitida, albida, fasciis nigricantibus crebris, superioribus moniliformibus, ornata; spira conica, apice acutiuscula, nigra; anfr. 5½ parum convexis, ultimo spira paulo longiore, ventroso; columella levissime arcuata; apertura obliqua, elliptico-ovali; perist. simplice, recto, margine columellari superne late reflexo, subappresso.*

Long. 22, diam. 11½ mill.

Hab. Rio Pampas, Bolivia (*Mr. Castelneau*).

44. Bulimus stenacme, Pfr. *B. testa umbilicata, ovato-turrita, solidula, ruguloso-striata, albida, strigis angustis pallide corneis variegata; spira elongata, apicem versus acutiusculum attenuata; anfr. 7 convexiusculis, ultimo ⅖ longitudinis subæquante, juxta umbilicum angustum subcompresso; apertura obliqua, oblongo-ovali, intus fusco-carnea; perist. simplice, recto, margine columellari superne dilatato, fornicatim reflexo.*

Long. 20½, diam. 9 mill.

Hab. Bolivia.

45. Bulimus monachus, Pfr. *B. testa anguste perforata, oblongo-turrita, tenui, striatula, diaphana, sordide cornea; spira convexo-turrita, apice acutiuscula; anfr. 7½ vix convexiusculis, ultimo 3/7 longitudinis subæquante, basi parum attenuato, rotundato; columella recedente; apertura obliqua, oblongo-ovali; perist. simplice, recto, margine columellari sursum dilatato, reflexo.*

Long. 31, diam. 11½ mill.

Hab. Meobamba, Peru (*Mr. Gueinzius*).

46. Partula purpurascens, Pfr. *P. testa perforata, ovato-conica, solida, oblique striata striisque spiralibus confertis distincte decussata, nitida, purpurascenti-fusca; spira convexo-conica, acuta; sutura levi; anfr. 5½ vix convexiusculis, ultimo spiram subæquante, peripheria subangulato, basi rotundato; columella leviter arcuata; apertura parum obliqua, truncato-oblonga; perist. fusco-violaceo, undique patente et reflexiusculo.*

Long. 22, diam. 14 mill.

Hab. ——?

47. Partula callifera, Pfr. *P. testa umbilicata, ovato-conica, solida, sublævigata (sub lente punctulato-striata), albida; spira convexiusculo-conica, obtusula; sutura levi; anfr. 5 convexiusculis, ultimo spira paulo longiore, inflato; columella subverticali, superne tuberculifera, intus plicata; apertura vix obliqua, sinuato-oblonga, dente profundo parietali coarctata; perist. incrassato,*

dilatato, marginibus callo junctis, dextro supra medium callo oblongo intus munito.

Long. 19, diam. 11 mill.

Hab. ——?

48. Partula lævigata, Pfr. *P. testa profunde rimata, ovato-conica, solida, lævigata (sub lente vix striatula), nitida, lutescente; spira conica, obtusula; sutura mediocri; anfr. 5 convexiusculis, ultimo spiram subæquante, prope suturam tumidiore, basi rotundato; columella supra medium introrsum nodoso-plicata; apertura vix obliqua, oblonga, tuberculo profundo anfractus penultimi coarctato; perist. crasso, albo, undique patente, margine columellari superne dilatato, adnato.*

Long. 20, diam. 10 mill.

Hab. ——?

49. Partula lilacina, Pfr. *P. testa subobtecte perforata, ovato-conica, solida, sub lente spiraliter striata, nitidula, lilacina; spira conica, acuta; sutura levi; anfr.* $5\frac{1}{2}$ *vix convexiusculis, ultimo spiram subæquante, rotundato; columella superne tuberculo subcircumscripto munita; apertura obliqua, truncato-oblonga; perist. incrassato, albido, breviter expanso, margine columellari fere adnato.*

Long. $17\frac{1}{2}$, diam. 10 mill.

Hab. Marquesas Islands.

50. Achatinella (Achatinellastrum) ovum, Pfr. *A. testa sinistrorsa, imperforata, globoso-conica, solida, ruguloso-striata, nitidula, albida; spira concaviusculo-conica, apice acuta; sutura profunde marginata; anfr.* $5\frac{1}{2}$, *superis planis, sequentibus convexis, ultimo inflato, spira vix breviore; plica columellari crassa, tuberculiformi, pallide lilacea; apertura diagonali, sinuato-semicirculari; perist. recto, nigro-fusco, limbato, intus crenato-labiato.*

Long. $19\frac{1}{2}$, diam. 13 mill.

Hab. Oahu, Sandwich Islands (*Dr. Newcomb*).

51. Achatinella (Laminella) farcimen, Pfr. *A. testa sinistrorsa, subperforata, oblongo-conica, solidula, rugulosa, sub epidermide nigricante albida; spira superne in conum acutum nudum terminata; anfr. 7, superis planis, 2 ultimis perconvexis, ultimo* $\frac{1}{3}$ *longitudinis paulo superante, medio subangulato; plica columellari compressa, obliqua; apertura obliqua, semiovali, intus alba; perist. simplice, recto, margine columellari subpatente.*

Long. 19, diam. 9 mill.

Hab. Mani, Sandwich Islands (*Dr. Newcomb*).

52. Achatinella (Labiella) callosa, Pfr. *A. testa imperforata, dextrorsa, fusiformi-oblonga, solida, leviter striatula, sub epidermide tenui fulvida alba; spira elongata, ventroso-conica,*

apice obtusula; sutura sublacera; anfr. 8 *planiusculis, ultimo* $\frac{1}{3}$ *longitudinis paulo superante, basi attenuato; plica columellari acute dentiformi, alba; apertura vix obliqua, acuminato-elliptica; perist. calloso, obtuso, margine dextro intus obsolete dentato.*
Long. 16, diam. 6 mill.
Hab. Oahu, Sandwich Islands (*Dr. Newcomb*).

53. ACHATINA (VARICELLA) GUADELOUPENSIS, Pfr. *A. testa oblongo-turrita, tenui, lævigata, nitidissima, pellucida, virenti-cornea, varicibus arcuatis, vix prominulis, castaneo-marginatis passim munita; spira regulariter attenuata, apice obtusa; anfr.* 7 *convexiusculis, ultimo* $\frac{1}{3}$ *longitudinis subæquante, basi attenuato; columella perarcuata, basi anguste truncata; apertura vix obliqua, acuminato-ovali; perist. tenui, margine dextro antrorsum dilatato, rufo-limbato.*
Long. 14, diam. 4$\frac{1}{3}$ mill.
Hab. In insula Guadeloupe (*Mr. Caillet*).

54. SPIRAXIS SANDWICHENSIS, Pfr. *Sp. testa subperforata, oblongo-turrita, solidula, cerea; spira turrita, obtusula; anfr.* 7$\frac{1}{2}$ *planiusculis, infra suturam plicatis, ultimo* $\frac{1}{3}$ *longitudinis paulo superante; columella compressa, torta; apertura vix obliqua, ovali; perist. simplice, marginibus callo tenui junctis, dextro antrorsum subdilatato, columellari subreflexo.*
Long. 9, diam. 3 mill.
Hab. Sandwich Islands (*Dr. Newcomb*).

55. SPIRAXIS OBSOLETA, Pfr. *Sp. testa subperforata, oblongo-turrita, tenui, levissime striatula, pellucida, nitida, pallide cornea; spira convexiusculo-turrita, obtusa; sutura marginata; anfr.* 6$\frac{1}{2}$ *convexiusculis, ultimo* $\frac{2}{5}$ *longitudinis formante; columella acuta, medio leviter torta; apertura vix obliqua, elliptico-ovali; perist. simplice, margine columellari brevissime reflexo, subadnato.*
Long. 8, diam. 3 mill.
Hab. Sandwich Islands (*Dr. Newcomb*).

56. TORNATELLINA GOULDI, Pfr. *T. testa ovato-conica, tenui, sublævigata, pellucida, cornea; spira elongato-conica, apice obtusula; anfr.* 5$\frac{1}{2}$ *convexis, ultimo* $\frac{2}{5}$ *longitudinis subæquante, rotundato; apertura obliqua, erecto-lunari, lamella valida intrante parietali et plica crassa triangulari columellæ coarctata; perist. recto, tenui.*
Long. 4, diam. 2$\frac{1}{2}$ mill.
Hab. ——?

57. TORNATELLINA NEWCOMBI, Pfr. *T. testa perforata, ovato-turrita, tenui, sublævigata, parum nitida, diaphana, pallide cornea; spira subrectilineari, conica, obtusula; anfr.* 7 *subplanis, ultimo* $\frac{1}{3}$ *longitudinis vix formante, basi convexo; apertura obliqua, ro-*

tundato-lunari, lamella mediocri parietali et plicis 2 *parallelis columellæ coarctata; perist. simplice, recto.*

Long. 4, diam. $2\frac{1}{3}$ mill.

Hab. Sandwich Islands (*Dr. Newcomb*).

58. TORNATELLINA PERFORATA, Pfr. *T. testa perforata, ovato-turrita, arcuato-striata, tenui, albido-hyalina; spira elongata, apice acuta; anfr.* 7 *convexis, ad suturam distanter plicatulis, ultimo* $\frac{1}{3}$ *longitudinis paulo superante; lamella parietali minuta; apertura vix obliqua, sinuato-ovali, acuminata; columella lamina torta munita; perist. tenui, margine dextro recto, superne antrorsum arcuato, basali expanso, columellari fornicatim reflexo, patente.*

Long. 18, diam. $7\frac{1}{2}$ mill.

Hab. Venezuela.

6. DESCRIPTIONS OF SIXTEEN NEW SPECIES OF PNEUMONOPOMA, FROM THE COLLECTION OF H. CUMING, ESQ.

BY DR. L. PFEIFFER.

A. OPISOPHTHALMA.

1. DIPLOMMATINA CANTORI, Pfr. *D. testa subrimata, sinistrorsa, ovato-oblonga, tenuiuscula, confertim et oblique plicata, albida; spira ovata, in conum acutiusculum terminata; anfr.* 6 *convexiusculis, ultimo ascendente,* $\frac{1}{3}$ *longitudinis vix superante; apertura subverticali, circulari; perist. subsimplice, continuo, superne adnato, cæterum breviter expanso.*

Long. 2, diam. 1 mill.

Hab. Lord Howe's Island, New Hebrides (*Mr. Macgillivray*).

2. TRUNCATELLA CEYLANICA, Pfr. *Tr. testa subrimata, attenuato-cylindracea, striatula, pellucida, nitida, corneo-rufa vel flavescente; anfr. superst.* 4, *supremis* 2 *rotundatis, reliquis planioribus, omnibus ad suturam plicato-crenatis, ultimo basi non compresso; apertura verticali, ampla, angulato-subovali; perist. continuo, margine dextro tenui, expansiusculo, columellari leviter arcuato, appresso.*

Long. 6, diam. 2 mill.

Hab. Ceylon.

3. TRUNCATELLA TERES, Pfr. *Tr. testa vix subrimata, cylindrica, tenuiuscula, longitudinaliter magis minusve distincte costulata, pellucida, nitida, rufo-cornea; sutura marginata, valide plicato-crenata; anfr. superst.* 4 *subæqualibus, convexiusculis, ultimo basi breviter cristato, calloso, albido; apertura verticali, late ovali, superne angulata, ad dextram dilatata; perist. simplice, continuo, margine dextro expansiusculo, columellari adnato.*

Long. 6, diam. 2 mill.

Hab. Isle of Mauritius, and Trinity Bay, Australia.

4. Truncatella barbadensis, Pfr. *Tr. testa subrimata, cylindracea, sursum vix attenuata, solidula, costulis confertis, obtusis, subrectis regulariter sculpta, sericina, rufo-cornea; sutura profunda; anfr. superst. 4½ perconvexis, lente accrescentibus, ultimo basi crista albida, antice peristoma cingente munito; apertura verticali, ovali, superne subrotundata, basi subeffusa; perist. continuo, margine dextro expanso et reflexiusculo, perarcuato, columellari subadnato.*
Long. 6⅓, diam. 2 mill.
Hab. Island of Barbadoes, West Indies.

B. Ectophthalma.

5. Cyclostoma (Cyclotus) daucinum, Pfr. *C. testa umbilicata, depressa, solidula, subangulata, daucina vel albida; spira parum elevata; sutura simplice; anfr. 4½ convexis, sensim accrescentibus, superioribus spiraliter striatis, ultimo rugoso, carina mediocri, antice evanescente munito; umbilico conico, ¼ diametri paulo superante; apertura parum obliqua, subcirculari; perist. simplice, recto, ad anfr. penultimum breviter interrupto. Operc. anguste et obsolete spiratum.*
Diam. maj. 12, min. 10, alt. 6 mill.
Hab. Salomon's Islands.

6. Cyclostoma (Opisthoporus) Cochinchinense, Pfr. *C. testa late umbilicata, discoidea, solida, vix striatula, sub epidermide fulvida alba, radiis pellucidis notata; spira subplana, medio vix elevata; anfr. 5 convexis, ultimo terete, antice soluto, pone aperturam spiraculo versus anfr. penultimum curvato munito; apertura circulari; perist. subsimplice, vix expansiusculo, superne levissime inciso. Operc. ?*
Diam. maj. 20, min. 16, alt. 7 mill.
Hab. Cochin China.

7. Cyclostoma (Opisthoporus) euryomphalum, Pfr. *C. testa late umbilicata, depressa, subdiscoidea, solidula, striatula, lutescente, strigis angulosis castaneis, superne latis, subtus linearibus, picta; spira plana, vertice nigro vix prominulo; anfr. 4½, prope suturam canaliculatam subangulatis, ultimo antice vix descendente, 4 mill. pone aperturam spiraculo brevi retroflexo munito; umbilico dimidium diametri fere occupante; apertura diagonali, subcirculari; perist. duplice, interno breviter expanso, ad anfr. penultimum subinciso, externo superne alatim dilatato, latere dextro patente, sinistro obsoleto. Operc. calcareum, angustispirum.*
Diam. maj. 15, min. 12, alt. 4 mill.
Hab. Borneo.

8. Cyclostoma (Cyclophorus) Shiplayi, Pfr. *C. testa umbilicata, depressa, tenuiuscula, membranaceo-striata, fulva, cas-*

taneo oblique strigata; spira vix elevata; anfr. 4 *convexis, ultimo terete; umbilico* ⅓ *diametri occupante; apertura obliqua, subcirculari; perist. simplice, recto, ad anfractum contiguum vix interrupto. Operc.?*
Diam. maj. 7, min. 6, alt. 3 mill.
Hab. Neilgherries, India (*Mr. Conway Shiplay*).

9. CYCLOSTOMA (LEPTOPOMA) SIGNATUM, Pfr. *C. testa perforata, globoso-turbinata, tenui, sub lente decussatula et lineis filaribus, subelevatis, subdistantibus cincta, diaphana, lutescenti-cornea, strigis confertis rufis fulgurata; spira turbinata, acutiuscula; anfr.* 5 *convexis, ultimo spiram subæquante,* 5-*lirato; apertura diagonali, subcirculari; perist. subincrassato, patente, marginibus fere contiguis, columellari angustiore. Operc.?*
Diam. maj. 11, min. 8⅔, alt. 8⅔ mill.
Hab. Borneo.

10. CYCLOSTOMA (LEPTOPOMA) DUPLICATUM, Pfr. *C. testa anguste umbilicata, globoso-turbinata, solidula, undique confertim spiraliter striata lirisque filiformibus distantibus cincta, fulva, strigis fulguratis rufis ornata; spira elevata, acutiuscula; anfr.* 5 *convexis, ultimo superne turgido, infra medium carina levi munito; apertura obliqua, subangulato-circulari; perist. subcontinuo, albo, duplice, interno vix porrecto, externo expanso et reflexiusculo, latere sinistro quasi abscisso. Operc.?*
Diam. maj. 10, min. 8, alt. 7 mill.
Hab. ——?

11. CYCLOSTOMA (CYCLOSTOMUS) BOIVINI, Pfr. *C. testa obtecte perforata, globoso-turbinata, tenuiuscula, spiraliter obsolete lirata; griseo et fulvido variegata, spadiceo multifasciata; spira turbinata; anfr. fere* 6 *turgidis, celeriter accrescentibus, ultimo ventroso, peripheria carina* 1 *compressa, albida munito, circa umbilicum confertim spiraliter lirato; apertura subverticali, oblongo-rotundata, intus nigricanti-sanguinea; perist. tenui, ad anfr. penultimum subemarginato, superne producto, margine dextro et basali late patente, columellari angusto, supra umbilicum dilatato, adnato. Operc.?*
Diam. maj. 29, min. 23, alt. 25 mill.
Hab. Nos-bé, Madagascar (*Mr. Boivin*).

12. CYCLOSTOMA (CYCLOSTOMUS) MICROCHASMA, Pfr. *C. testa umbilicata, depresse turbinato-globosa, tenuiuscula, spiraliter confertim lirata, striis incrementi vix decussatula, albido-lutescente; spira turbinata, obtusula; anfr.* 4½ *convexis, ultimo terete, infra peripheriam fascia latiuscula castanea ornato; umbilico conico,* ⅕ *diametri fere occupante; apertura parum obliqua, parvula, fere circulari; perist. tenui, vix expansius-*

culo, marginibus fere contiguis, ad anfr. penultimum callo brevi junctis. Operc.?
Diam. maj. 18, min. 15½, alt. 12 mill.
Hab. Madagascar.

13. CYCLOSTOMA (CYCLOSTOMUS) SARCODES, Pfr. *C. testa umbilicata, turbinata, solidula, liris obtusis subconfertis striisque illas transgredientibus creberrimis sculpta, carnea, fusco-violaceo uni- vel plurifasciata; spira turbinata, acutiuscula; anfr.* 5 *convexis, ultimo circa umbilicum angustum, subpervium liris angustioribus, prominentioribus munito; apertura fere verticali, ovali-rotundata; perist. anguste expanso, breviter adnato, superne subangulato. Operc.?*
Diam. maj. 17, min. 14, alt. 14 mill.
Hab. Madagascar.

14. CATAULUS CUMINGI, Pfr. *C. testa vix rimata, turrito-fusiformi, solidula, subgranulato-striata, daucino-fusca; spira convexo-turrita, apice acutiuscula; sutura submarginata; anfr.* 8 *vix convexiusculis, penultimo convexiore, ultimo attenuato, basi axin vix excedente; carina umbilicali compressa, albida, angulatim patula; periomphalo mediocri, turgido, distinctius striato; apertura subcirculari; perist. albo, continuo, incrassato, fornicatim patente, superne anguste adnato, cæterum dilatato, basi longe producto, canali infundibuliformi perforato.*
Long. 20⅔, diam. medio 7 mill.
Hab. Ceylon (*Mr. Thwaites*).

15. HELICINA IDÆ, Pfr. *H. testa conoideo-depressa, tenuiuscula, striata, lineis spiralibus impressis distantibus sculpta, nitida, lutea vel carnea; spira conoidea, acutiuscula; anfr.* 5 *planiusculis, ultimo peripheria subangulato, basi convexiore; callo basali tenui, concolore; columella brevi, antrorsum subdentata; apertura diagonali, subsemicirculari; perist. acuto, breviter expanso, intus labiato. Operc.?*
Diam. maj. 8, min. 6½, alt. 4½ mill.
Hab. Ceram (*Mrs. Ida Pfeiffer*).

16. HELICINA VIRENS, Pfr. *H. testa conoidea, solida, striatula et sub lente minute spiraliter striata, carinata, nitida, albido-virente; spira convexo-conoidea, apice acuta; sutura marginata, carina interdum prominente; anfr.* 6 *vix convexiusculis, summis interdum rufo-fasciatis, ultimo antice vix descendente, peripheria acute albocarinato, basi parum convexo; apertura diagonali, subtriangulari-semiovali; columella brevi, superne leviter impressa, callum emittente circumscriptum, luteum, subgranulatum; perist. acuto, albo, expanso. Operc. tenue, castaneum.*
Diam. maj. 11⅓, min. 10, alt. 8 mill.
Hab. ——?

7. DESCRIPTIONS OF FOUR NEW SPECIES OF KELLIADÆ IN THE COLLECTION OF HUGH CUMING, ESQ.

BY SYLVANUS HANLEY.

1. MONTACUTA COQUIMBENSIS. *M. testa ovata vel obovata, inæquilaterali, antice obtusissime angulata, postice longiore et late rotundata; tenui, subpellucida, maxime compressa, infra epidermidem lutescentem albida (intus albo-submargaritacea), concentrice et argutissime rugulosa; margine ventrali integro, convexo; margine dorsali utrinque, prope nates acutissimas, subretuso vel subrecto, antice subdeclivi, postice vix declivi, lunula angustissima planulata impressa; fossula ligamentali apicali late trigona inter dentes duos laterales (altera in valvula subobsoletos) breves divergentes prominentesque occlusa.*

Lat. $\frac{1}{3}$ poll.

Hab. Coquimbo, in fine sand, 6 fathoms (*H. C.*).

The cartilage-pit is attached to the umbo, and edged below with a curved rim. The lateral scars are large, and well marked; the pallial line is perceptibly simple. It is a somewhat aberrant species.

2. KELLIA TELLINOIDES. *K. testa rotundato-ovali, rarius subrhombea, subæquilaterali, solidiuscula, haud pellucida, nitida, candida, lævi, subventricosa; margine ventrali intus simplice, postice arcuato, antice subrecto, ascendente; margine dorsali utrinque subrecto et vix declivi; umbonibus prominulis; natibus acutis; superficie interna submargaritacea; impressionibus muscularibus magnis (præsertim antica); linea palliari simplice; in utroque valvula dentibus lateralibus duobus, validis, subæquidistantibus et dente unico apicali antico.*

Lat. $\frac{2}{5}$ poll.

Hab. Baclayon, Isle of Bohol, Philippines, under stones.

The shape, as in most of the *Kelliadæ*, is wont to vary. It is obtusely rounded behind, and in front is either very bluntly peaked, or obliquely subtruncated at the ventral corner.

3. PYTHINA MACTROIDES. *P. testa transversim subtrigona, æquilaterali vel subæquilaterali, utrinque rotundata, magis minusve solida, compresso-convexa, extus albido-lutescente, intus alba, nitida, lævi (sub lente minutissime punctulata); margine ventrali integro, subrecto, in medio subretuso; margine dorsali utrinque subrecto et subæqualiter declivi; natibus acutis, prominentibus, haud recurvis; cardine utriusque valvulæ dentibus lateralibus duobus, solidis, subtrigonis, approximatis, in v. sinistra cum cardinali unico obliquo, acuto, angusto, et in v. dextra cum tuberculo dentiformi ad basim d. lateralis antici superimposito.*

Lat. $\frac{3}{12}$ poll.

Hab. Cape of Good Hope.

The muscular impressions are well developed, and the simplicity of the pallial line clearly perceptible. Allied to *Bornia corbuloides* of Philippi.

4. Pythina nuculoides. *P. testa ovata, obtuse subcuneiformi, valde inæquilaterali, postice duplo longiore et rotundato-subattenuata, antice rotundato-subtruncata; solidiuscula, convexa, lævi, extus intusque albida, nitida; margine ventrali crenato, convexo, postice acclivi; margine dorsali antice abrupte declivi et (vix subconvexo) postice convexo et modice declivi; natibus subacutis; superficie interna sulcis obsoletis inferne ornata.: cardine valvulæ dextræ dente laterali flexo, solido, brevi, prominente, approximato, postice subtruncato, et dente apicali valido, trigono, prominente, unico; valvulæ sinistræ dente laterali longiore, solidiusculo, postice truncato, et cardinalibus duobus, quorum apicalis oblique prominet, minorque contiguus est sublaminaris.*

Long. $\frac{1}{3}$, lat. $\frac{2}{5}$ poll.

Hab. Huacna, Society Islands, under stones on reefs (*Cuming*).

The shape resembles that of *Nucula nucleus*. The narrow cartilage is attached to the front of the lateral tooth; the hinge-margin exhibits a minute shagreen-like crenulation; the muscular impressions are strongly marked, and the pallial line perceptibly simple. Récluz's description of his *Erycina donacina* would apply to this shell, were it not for the dentition.

November 11, 1856.

Dr. Gray, F.R.S., in the Chair.

The following papers were read:—

1. On a New Species of Squirrel (Sciurus macrotis) from Borneo. By J. E. Gray, Ph.D., F.R.S. etc.

(Mammalia, Pl. XLVI.)

Among the specimens of animals which the British Museum has lately received from Mr. Wallace from Sarawak, is a large, well-marked species of Squirrel, particular for having very large, longish pencilled ears like the European species, with a broad white streak on the upper part of each side, and a very broad full tail, grisled, with large white tips to the hairs.

Sciurus macrotis. (Pl. XLVI.)

Ears large, with large pencil of elongate hairs. Dark chestnut-brown, very minutely grisled with pale tips to the hairs. Rump, outside of thighs and base of tail redder; point of thighs bright bay; feet blackish; upper part of the side with a broad pale streak; cheeks and inner side of legs paler; chin, throat, and beneath white; tail very broad, with very long white-tipped hairs.

Length 13, tail 11=24 inches.

Hab. Sarawak (*Mr. Wallace*).

2. OBSERVATIONS ON A LIVING AFRICAN LEPIDOSIREN IN THE CRYSTAL PALACE. BY J. E. GRAY, PH.D., F.R.S. ACCOMPANIED BY A NOTE FROM MR. A. D. BARTLETT.

(Reptilia, Pl. XI.)

This animal has been exhibited for some months at the Crystal Palace, appears to be in good health, and has increased in size.

Mr. W. Hawkins, in the 'Illustrated News' (Supp. 20 Sept. 1856), which gives a very good figure of the animal from life, observes:—

"The three living specimens of this animal were brought to England from the Gambia, enclosed in balls of hard clay, where they had been for eight months without showing any signs of life, until those balls of hard clay were immersed in water, which caused the clay to crack and break up, discovering dark-coloured egg-like forms, which also presently burst, liberating their inmates, which briskly swam or rather dashed through the water, showing unmistakeable signs of life by feeding voraciously upon very large worms, small frogs and pieces of meat that were presented them."

The *Lepidosiren* uses its tail to propel itself forward and upward towards the surface of the water. The subulate limbs are very much elongated; the front ones are furnished with a narrow membranaceous margin of nearly equal width the whole length of the hinder edge; the hinder one has a narrow membrane on the middle of the outer side; they are exceedingly mobile and flexible, and are used by the animal to direct its motions, and are more like feet than fins, especially when they are within reach of some fixed body which the animal can use as a fulcrum.

There are two processes on each side over the base of the anterior members, which have been regarded as gills by some authors *; they are coloured like the rest of the body, and I could not discover, even when examined by a hand-magnifier of one inch focal length, that they were pervaded by any peculiar vascular structure, or furnished with any cirri or other processes usually found on the external gills of *Batrachia*. They scarcely moved during the time that I was examining the specimen, except when the animal was swimming, when they were used like the larger members, apparently to assist in directing its motions, and they evidently form part of the anterior members. They are placed rather close together somewhat above the base of the elongated finned filament. These limbs are used to support the animal some height above the surface of the gravel when it is at rest.

Indeed, all the motions of the animal much more resemble those of a *Triton* or *Lissotriton* than of an eel-shaped fish.

The upper and lower surfaces of the head are furnished with lines of mucous pores placed in a symmetrical manner on the two sides, similar to the pores observable on the head and chin of different kinds of fish, and of *Tritons* and *Lissotritons*: and there is a distinct continuous line of pores, like the lateral line of fish and *Tritons*, which is continued on the tail some distance behind the base of the hinder members, but becoming less distinct at the hinder part of the series.

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* See Peters, Ann. and Mag. Nat. Hist. xvi. 348.

The eyes are of moderate size, scarcely raised above the surface, round, without any eyelids; the pupil is black, small, circular, less than one-third the diameter of the globe, with a narrow golden iris.

The Mud Fish is generally to be observed swimming about under the water, or resting at the bottom of the tank, supporting itself by its members, an inch and a half or two inches above the surface of the gravel, with its nose generally in the corner, bent down and partly hidden in the gravel.

The mouth is firmly closed by the overhanging upper lip, except in front, where there is a small oblong, transverse, horizontal opening on the outer edge of the lips, admitting the water to the small open external nostrils, which are on the middle of the under side of the upper lip. This opening does not extend to the hinder part of the lips, which are closed behind it, so that water cannot enter the mouth in that direction except through the nostrils.

In this quiescent state the lateral gill-opening is generally closed, but sometimes it is slightly elevated, and a small current appears to be emitted now and then from it, as if a small quantity of water were taken in by the nostrils and emitted by the gill-flap; but this action is not continuous nor very distinctly visible.

While remaining under the water the animal sometimes opens the mouth to its full extent, leaving it open for some time, dilating the throat by the action of the os hyoides; when fully dilated it closes its mouth, opens the gill-aperture, and contracting the throat emits a strong current of water through the lateral gill-aperture.

It occasionally but at uncertain periods rises perpendicularly to the top of the water, until the front part of the head and the whole mouth are exposed above the water; it then opens its mouth, which it retains open for a time, dilates its throat, as if taking in all the air it can contain, closes the mouth, descends under the surface and contracts its throat, as if it were forcing the air into the lungs (sometimes during this action one or two very small bubbles of air are emitted at the gill-aperture), and then the animal takes up its old position near the bottom of the vase.

I once saw the animal ascend and so take in air almost immediately after it had been passing a fresh supply of water to its gills. When I have been observing it, it appeared to take in air more frequently than water *. It often rises with its body perpendicular, as if it were going to take in free air, but descends again without reaching the surface of the water.

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* Mr. W. Hawkins in the 'Illustrated News' observes:—"It is seen habitually to rise to the surface of the water for a larger supply of atmospheric air, thrusting its open mouth above the surface."

Dr. Holbrook appears to have observed the same habit in the *Necturus maculosus* (which is probably the larva of the Hell-bender or *Protonopsis horrida*). He states that that animal in confinement "ascends to the surface (of the water), taking in a mouthful of air, and sinks again with it to the bottom."—Amer. Herpet. i. 113.

The organs of respiration of this animal are twofold:—

1. Well-organized gills on the inner edge of the branchial arches, as in fishes, and a regular gill-cover with a small oblong aperture in front of the base of the anterior members (see Owen, Trans. Linn. Soc. xviii. t. 25. f. 3, t. 26. f. 1).

2. Two well-developed cellular lungs of nearly equal size (see Owen, Trans. Linn. Soc. xviii. t. 25. f. 3, t. 26. f. 1, 2).

3. The nostrils are close together, situated on the under side of the inner lip, with their internal opening on the side of the mouth between the lips and the outer edge of the large inner series of teeth; the passage is short, as a probe is easily passed from the one opening to the other, and the inner nostrils are very evident in the living animal when it opens its mouth to take in air.

M. Bischoff observed these interior nostrils also in the *Curamuru* or *Lepidosiren paradoxa* of the Brazils.

The animal is, therefore, provided with well-developed organs for both aërial and aquatic respiration, and its manner of breathing is perfectly conformable to this organization: it is consequently the most perfectly amphibious animal, equally adapted for living on land or in water, that has come under my observation.

The character which best separates the Batrachian—as the Toad, Frog and Salamander—from the Fish, is, that in both the larva and perfect state they are provided with an external and internal nostril, and it is through this nostril that these animals take in or emit the air which they respire; while in fish, the water which they respire is taken in by the mouth, and after passing over the gills is emitted by the lateral aperture of the gill-flap; the nostril being only a sac, without any communication with the cavity of the mouth.

When a Batrachian respires, the mouth is kept closed, the throat being used like a pair of bellows to force the air into the lungs; and if the mouth is kept open, the animal dies for want of the power of respiring. In fish, on the contrary, the mouth is always more or less open, the fish either constantly gulping in the water, then closing the mouth or lips, and emitting it by the lateral opening; or the mouth is partially open, and the animal uses its tongue and the hinder internal edge of the lip as a kind of valve, by which the cavity of the mouth is closed and the water is forced to pass through the gills.

The *Lepidosirens* appear to take in water by the nostrils, and at the same time to respire both air as Batrachians and water as fish.

The generality of the Amphibia, as the Toads, Frogs, and Efts or Salamanders, are organized for aquatic respiration in their young and lower state, and for aërial respiration in their adult condition; but this animal has both kinds of organs in a state fit for perfect use at the same time, and the animal evidently uses them simultaneously.

It appears to me that the Mud-fish is much more nearly related to the Amphibia than to any fish that I am acquainted with; at the same time it evidently forms a particular group in that class.

Dr. Daniel, who has lived for several years on the Gambia and on Macarthy's Islands, informs me that the *Lepidosiren*, like the Mud Eel or true *Siren*, is only found in the rice-fields, which are for more than half the year under water, and that they are only procured by the natives towards the end of the dry season, when they are dug out of the nearly-dried mud. They are eaten fried, and like Eels have a rich oily flavour.

The habit of living in the mud is common to several Amphibia; thus the Mud-eel, or *Siren lacertina*, which has lungs and external gills, lives chiefly in mud, being dug out when the ditches of the rice-fields in Carolina are cleared. The Hell-bender or Mud-devil (*Protonopsis horrida*) and the Congo Snake (*Amphiuma*), which have internal gills and lungs and a small lateral gill-opening, live sunk in the mud often to the depth of 2 or 3 feet, especially in winter; and they and the *Siren lacertina* will live for some time out of water, and are said sometimes to leave it voluntarily.

Aquatic animals much more frequently bury themselves in the mud than is generally supposed. The common English Frogs and the large Efts bury themselves in the mud during the greater part of the winter, and this also is the case with *Dytisci* and other aquatic insects.

But some fish also, which have only gills adapted for aquatic respiration, have the same habit. Dr. Hancock observes, "When the water is leaving the pools in which they commonly reside, the Yarrow (a species of *Esox*, Linn.), as well as the round-headed Hassar (*Callichthys littoralis*), bury themselves in the mud, while all other fishes perish for want of their natural element, or are picked up by rapacious birds. The flat-headed Hassar (*Doras costata*), on the contrary, simultaneously quits the place and marches overland in search of water, travelling for a whole night, as is asserted by the Indians, in search of their object. I have ascertained by trial that they will live many hours out of water even when exposed to the sun's rays. Their motion over land is described to be somewhat like that of a two-polled lizard: they project themselves forward on their bony arms by the elastic spring of the tail exserted sideways; their progress is nearly as fast as a man will leisurely walk."—Zool. Journ. iv. 243.

"The Indians say that these fishes carry water within them for a supply on their journey. There appears to be some truth in this statement, for I have observed that the bodies of the Hassar do not get dry like those of other fishes when taken out of the water; and if the moisture be absorbed, or they are wiped dry with a cloth, they have such a power of secretion that they become instantly moist again; indeed it is scarcely possible to dry the surface while the fish is living."—*Loc. cit.* 243.

Dr. Hancock further observes, that a fish which he thinks is *Loricaria pleistomus* "is not only furnished with the common appendages for swimming, but also with four strong bony supporters, one attached to each of the pectoral and belly fins (*i. e.* constituting the first ray of each), by which the animal creeps on the bottom of the river, and perhaps where there is little or no water, also being as it seems partly amphibious."—*Loc. cit.* 243.

From this account, it appears that the habits of these fish bear very little relation to those of the Mud-fish.

It is well known that many freshwater Mollusca which respire free air, and I believe some of those which are furnished with pectiniform gills for aquatic respiration, as *Paludinæ* and *Valvatæ,* in the warmer climates, such as India, where the waters of the streams or ponds are dried up, bury themselves in the mud to a considerable depth like the Mud-fish, and like them remain in a torpid state until the return of the rainy season.

Sir William Jardine has described the kind of cocoon in the clay in which the Mud-fish are brought to this country; but I am informed by Mr. Bartlett that the cavity is always furnished with a small aperture opposite to where the nose of the animal is placed.

In referring this animal to the class of Fishes, authors have laid great stress on the fact of its being provided with a lateral line. Thus M. Duméril, in the last essay on the subject, notices the line, "which is ramified on the sides of the head as in *Chimera,*" overlooking the fact that the *Triton cristatus,* the common Eft, has similar lines on both the sides and head. He compares the gill-rays and branchial aperture to that of *Mormyrus* and *Cobitis,* but they are equally like those of *Protonopsis*; and he compares the nostrils to those of the Lamprey, overlooking the fact that the animal is provided with nostrils communicating with the cavity of the mouth. See Erp. Générale, ix. 213.

I have been informed that this genus is found in other parts of Africa, as Senegal, where it is called *Tobal,* and the White Nile, from whence M. Armaud sent specimens to the Paris Museum in 1843; and Dr. Peters found a species in Quillemanes, which Peters and J. Müller have called *Rhinocryptes amphibia.*

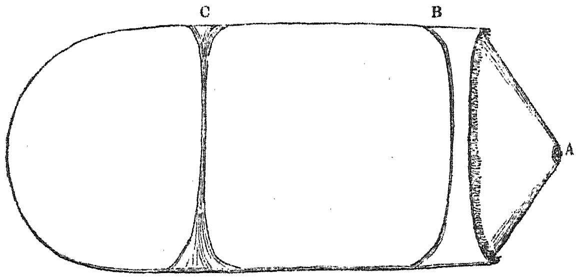
In reply to a note I had addressed to him, I have received the following interesting communication from Mr. Bartlett, who at the same time informed me that he intended to have communicated it to the next meeting of the Society:—

"Crystal Palace, Sydenham,
November 17th, 1856.

"Dear Sir,—In reply to your note respecting the living Mud-fish, I beg to say that in the month of June last I received from Western Africa a case containing four specimens of this animal; each specimen was imbedded in a block of *dry hard muddy clay,* about the size of a quartern loaf; these blocks of clay were each sown up in a piece of canvas to prevent the clay crumbling or falling to pieces. According to the instructions I received from Capt. Chamberlayne (the gentleman who sent them), I placed them in a tank of fresh water at the temperature of 83 degrees; in doing this a portion of the clay crumbled off one of them and partly exposed the case in which the animal was contained; I was watching the operation when suddenly the *case or cocoon* rose to the surface of the water. I at first thought the animal contained in it must be dead, but I shortly afterwards observed a slight motion: apparently the animal was endeavouring to extricate itself, and this it soon afterwards accomplished by breaking through the side of its tough covering; it swam about immediately, and by diving into the mud and clay, which by this time had become softened, rendered it difficult to make further observations; I removed the case or cocoon, which still floated, and which I now send for your examination. On the following morning I found that two more of the animals had made their appearance; their cases however were not to be seen—they evidently remained imbedded in the soft clay. In the course of the next day the fourth animal suddenly floated to the surface enveloped in its case; as it showed no signs of life I removed it, and found the animal had been dead some time, as it was much decomposed. At the time these animals first made their appearance they were very thin, and about 9 inches long; they began to feed immediately upon *earth-worms, small frogs, fish*, &c., occasionally taking raw flesh. I saw them sometimes attack each other, and one of them (I imagine in endeavouring to escape) leaped out of the tank into the large basin in the Crystal Palace in which the tank was standing (this specimen is still at large among the water-lilies, &c.). The remaining two lived together for some time, apparently on good terms; but in the month of August the one now remaining in the tank seized its companion and devoured nearly half of it, leaving only the head and about half the length of its body. In feeding, this creature masticates the food much, frequently putting it forward almost quite out of its mouth and then gradually chewing it back again, and often (when fed upon raw flesh), after having so chewed it for some time, it will throw it out altogether. The growth of these animals is most extraordinary: in June, as I have before stated, they were about 9 inches long; in three months they attained their present size, which cannot be less than 18 inches in length. It rises frequently perpendicularly to the surface to breathe, and at other times it supports itself on its fin-like appendages, and with the aid of its tail raises its body from the ground, the fins being bent or curved backwards. The movement of this animal is generally very slow, and would give one an idea that it was very sluggish; this however I have good reason to know is not the case, as in attempting to capture the one at liberty in the large basin it darted away with the rapidity of an arrow. I have reason also to believe the animal finds its food as much by *scent as sight*. With reference to the cocoon which I herewith send for your examination, the end covering the nose of the animal is rather pointed, and has an aperture about the size of a pin's head, which I have no doubt enables the animal to breathe through during its state of torpor. The animal when in its case is coiled nearly twice round, and I observed in each of the blocks of clay a small hole about the size of a mouse-hole, which was quite smooth on the inside, as though the animal had crept through it.

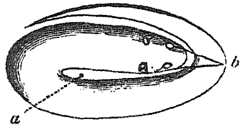
"I am, dear Sir,
"Faithfully yours,
"A. D. Bartlett."

Cocoon of the Mud-fish (Lepidosiren annectens).



A. Breathing-hole at nose.
B. A thin partition.
C. An attaching band that passes through the space where the animal bends, as in *a*, fig. D.

Fig. D.



D. A sketch of the animal in the cocoon.
a. The position of the band C. *b*. The head, nose and eyes.

3. Note sur le Messager ou Serpentaire du Cap de Bonne-Espérance (Serpentarius reptilivorus, Daud.). Par M. Jules Verreaux.

Tous les naturalistes modernes s'accordent aujourd'hui à regarder l'oiseau dont il est question comme un vrai rapace, et ils ont d'autant plus raison, qu'il en a tous les caractères; seulement c'est un de ces types représentant dans cette famille la même place qu'occupe le *Cariama cristata*, Cuv., dans celle des Gralles.

Cette question étant complètement élucidée, nous allons donner sur cette espèce des détails de mœurs plus exacts que ceux donnés par devanciers, ayant été favorisés, mieux qu'eux, non seulement par un séjour de plus de vingt ans, mais encore par les voyages consécutifs que nous avons entrepris dans l'intérieur des terres, là où peu de naturalistes avant nous avaient été à même de pénétrer.

Reconnaissant comme tout le monde que les Cathartes et les Vautours sont des oiseaux de la plus grande utilité, nous avions pensé il y a bien des années que le Serpentaire était aussi un de ces oiseaux qui, après eux, était destiné à rendre d'immenses services à l'humanité.

Nous commencerons donc par dire que bien que cette espèce de l'Afrique Australe soit répandue sur presque tous les points de cette partie du monde, elle n'est nulle part aussi abondante que sur la côte est en partant de la ville du Cap.

On ne la trouve que par paire, et l'on peut dire qu'à partir de quelques lieues de la ville, il n'est guère d'habitation qui ne possède son couple, qui parait même faire partie intégrante de la propriété dont il ne dépasse pas les limites s'il n'est pas dérangé ; du reste, les lois et les colons leur accordent toute leur protection, ils ne sont nullement inquiétés ; cela tient aux services qu'ils rendent en détruisant chaque année une immense quantité de reptiles de toutes espèces qui font la base de leur nourriture, et surtout des serpents excessivement venimeux.

Comme la nature est prévoyante dans tout ce qu'elle fait, elle a donné à chaque être ses moyens de conservation. Aussi le Serpentaire a-t-il été modelé sur un moule approprié à son genre de vie ; c'est donc à cet effet que les jambes et les tarses étant très-allongés, son œil perçant peut découvrir à une très-grande distance la proie qui, ne se doutant guère de son apparition, est souvent étendue sur le sable ou sur les plantes grasses qui tapissent le sol.

La forme élégante et majestueuse de cet oiseau devient en ce moment surtout plus gracieuse encore ; c'est là qu'il développe toute sa ruse afin de surprendre le reptile qu'il veut attaquer ; aussi n'approche-t-il qu'avec la plus grande circonspection, les plumes du col et du derrière de la tête dressées en avant annoncent le moment de la lutte : se ruant d'un bond sur l'animal, il le frappe du pied avec tant de force, que souvent il le terrasse du premier coup.

Cependant, s'il n'a pas réussi, et que le serpent furieux se dresse en épanouissant la peau de son cou comme cela arrive pour les espèces les plus dangereuses, l'oiseau forcé de rétrograder, fait un bond en arrière en attendant qu'il puisse saisir le moment opportun de recommencer.

Dressé en partie sur lui-même le serpent furieux fait mouvoir sa langue avec la dextérité de l'éclair, et pousse des sifflemens aigus qui retentissent au loin et semble tenir en respect son ennemi ; mais celui-ci dont le courage redouble à mesure que les difficultés augmentent, entr'ouvre les ailes, et revenant sur le reptile lui assène de nouveau de ces coups de pied terribles, dont personne ne peut se faire une idée, et qui ne tardent pas à le mettre hors de combat. Cependant, nous avons vu quelquefois de ces serpents s'élancer sur le Serpentaire, mais soit en ouvrant les ailes dont les premières rémiges seulement servent en quelque sorte de bouclier, soit en sautant en arrière, ou sur les côtés, il est certain d'éviter par ce manége la morsure de son antagoniste, qui, épuisé de fatigue, retombe toujours à plat sur le sol,—moment que choisit l'oiseau pour redoubler ses coups de massue qui, en lui mutilant la colonne vertébrale, achèvent de lui retirer toutes ses forces.

C'est alors que le Serpentaire victorieux s'élançant comme une flêche et posant le pied sur le cou du serpent, juste derrière la tête, commence à l'avaler, chose qu'il pratique en prenant la queue d'abord ; et comme cette opération n'est pas de longue durée, même pour des reptiles de 5 à 6 pieds de longueur, sur plus de quatre pouces de diamètre, dès qu'il arrive à la tête, il ne manque jamais d'en briser le crâne par plusieurs coups de bec qui le mutilent complètement.—L'opération faite, l'oiseau reprend sa course lentement jusqu'au lieu de son domicile, où il reste des heures entières repu, la tête rentrée dans les épaules.—Comme la majeure partie des oiseaux de proie, le Serpentaire rejette, sinon les plumes ou les poils, du moins les écailles des reptiles qu'il avale, et cela par pelottes comme les autres. Il est étonnant de voir la prodigieuse dilatation de la bouche de cet oiseau, car nous avons été témoin qu'il pouvait avaler des reptiles de plus de 6 pouces de circonférence.—Bien que le couple ne se quitte jamais, ils ne se secondent pas mutuellement pour terrasser une proie, et chacun chasse pour son compte.

Levaillant, qui le premier a donné une bonne figure et une exacte description du plumage de cet oiseau, ayant, comme nous, eu le malheur de perdre ses observations, aura sans doute faussé ses souvenirs lorsqu'il tenait la plume pour en décrire les mœurs, car ce qu'il dit au sujet de l'aile de l'oiseau qui lui servirait de massue, n'est pas exact, puisqu'elle ne lui sert que de bouclier : c'est avec la plante du pied qu'il terrasse ses ennemis. Nous en somme d'autant plus persuadé, qu'ayant suivi pas à pas le savant voyageur, mieux que personne nous avons été à même de lui rendre cette justice consciencieuse que peu de personnes avant nous s'accordaient à lui allouer. —Puissent les voyageurs suivre son exemple ! et la science d'observation, celle que nous regardons comme la clef de toutes les sciences naturelles fera plus de progrès.—Nous ajouterons que c'est en juillet que le Serpentaire a son plus beau plumage. Le mâle, qui est un peu plus petit que la femelle, a une coloration plus pâle, plus grise et plus blanche. C'est aussi vers le milieu de ce mois que commencent les amours, et tous deux travaillent à la construction ou au replâtrage du nid où plutôt de l'aire qui doit contenir la nouvelle famille. Cette aire est presque toujours placée sur la sommité d'un buisson élevé et très-touffu, le plus souvent un Mimosa. Elle est composée de buchettes et de terre, le centre en est garni de substances moelleuses, soit de plumes ou de laine, quelque fois même du pollen des plantes; il est facile de compter le nombre d'années par les diverses couches qui la composent, comme pour les Aigles chaque année apporte au nid une couche nouvelle.—Il arrive souvent que les branches qui l'entourent poussant sur les côtés des jets, le cachent complètement à la vue, ce qui devient une sécurité de plus pour la famille.—Nous avons observé que dans les pays boisés, le Serpentaire faisait son aire sur les grands arbres. Du reste, n'importe où il se trouve, le couple s'y retire chaque soir pour y passer la nuit.—C'est en août qu'a lieu la ponte, elle est généralement de deux œufs, quelquefois trois. Ces derniers sont à peu près du volume de ceux d'une oie, mais d'une forme plus ronde d'un bout ; leur couleur est d'un blanc pur sans aucune trace de taches. Au bout de six semaines les jeunes éclosent ; ils sont alors recouverts d'un duvet blanc, qui au bout de cinq à six autres semaines laisse poindre çà et là des plumes ; ces dernières ont à la teinte près la même coloration que celles de l'adulte.

Ce qu'il y a de plus terrible et de plus fatigant pour les parents, c'est que la faiblesse des pieds des jeunes les forçant de rester au moins six mois dans leur nid, ils sont tous deux obligés de chasser sans relâche pour assouvir l'appétit dévorant de leurs enfans qui absorbent une quantité si considérable de reptiles, qu'elle surpasse de beaucoup celles des adultes. Ce qui oblige les père et mère à des courses lointaines et à avoir recours, soit aux tortues, aux lezards, et même à de gros insectes comme des Sauterelles quand la disette des premiers se fait sentir. Mais la becquée ne se donne qu'avec des objets qui ont déjà subi une préparation dans le jabot, du moins, lorsque les jeunes sont encore trop faibles pour manger d'une autre façon ; car une fois assez forts pour avaler des reptiles complets, les parents ne se donnent plus cette peine, et les apportent tout entiers en ayant le soin de les choisir d'une taille proportionnée, ou en les morcelant pour en faciliter la digestion. Rien de plus curieux que de voir ces oiseaux qui ont acquis tout leur développement, se mouvoir sur leurs tarses à l'aide de leurs talons, ce qui leur donne une tournure fort originale.

Nous avons remarqué que pendant la couvaison, le mâle seul était chargé de nourrir sa femelle qui n'abandonne jamais ses œufs ; aussi est-il facile de reconnaître par la présence des débris d'ossemens le local choisi pour l'habitation de ces oiseaux.

Comme presque tous les grands oiseaux de proie, le couple Serpentaire ne souffre aucune autre espèce dans le canton qu'il a choisi pour son domaine, mais en revanche les petits oiseaux, et principalement les diverses espèces des Cisserins, choisissent-ils le voisinage de leur domicile pour y construire leurs nids qui sont suspendus tout autour de cette aire ; il semble que ces frèles créatures cherchent, en agissant ainsi, à se mettre sous la protection des hôtes qui habitent le palais du canton. Chose étrange que la domination ! le droit du plus fort semble toujours être le point de ralliement de toutes les craintes. Il faut dire qu'en cette circonstance ces petits oiseaux devinent juste, car les serpents sont si nombreux que souvent ils sont victimes de leur voracité, tandis qu'ils ne redoutent en aucune façon celle des Serpentaires qui s'enorgueillisent en quelque sorte de leur supériorité tant ils laissent approcher d'eux ces petites créatures.—Nous avons possédé pendant notre séjour au Cap de Bonne-Espérance un grand nombre de ces oiseaux, et depuis bien des années nous avions formé le souhait de voir introduire cette espèce dans nos colonies, lorsqu'en 1826 à notre retour au Cap, nous décidâmes M. Freycinet, ex-gouverneur de l'île Bourbon (aujourd'hui de la Réunion), à prendre plusieurs de ces couples pour en faire l'essai à Cayenne, où il se rendait pour prendre le même poste qu'il venait de quitter.—Pendant longues années nous avions cru cette tentative en plein succès, lorsque nous apprîmes que par la faute même des colons elle n'avait pas réussi, ceux-ci ayant détruit volontairement une des choses les plus utiles à leur conservation. Enfin comme nous venons de le dire, ayant eu en notre possession un nombre considérable de ces oiseaux, et ayant fait toutes les études possibles sur leurs mœurs, nous pouvons aujourd'hui répondre de la réussite de leur acclimatation, non-seulement dans les colonies d'Amérique et des

Indes, mais encore dans celle de l'Algérie où ces oiseaux rendraient un service immense. Réduit à l'état de domesticité, le Serpentaire se contente de viandes de toutes espèces; ce serait un excellent sergent de ville pour les basses cours, car comme l'Agami il mettrait l'ordre dès que quelques combats s'engageraient. Malheureusement le nombre considérable d'espèces d'animaux que nous tenions ensemble nous ont toujours empéché de voir cette espèce se reproduire chez nous.—Nous avons eu la preuve que s'il avait été possible de les tenir dans un espace plus grand et plus isolé, ces oiseaux auraient produit comme en pleine liberté; les trois œufs non à terme que nous avons trouvés nous ont fourni cette preuve.

Nous pensons donc que si on voulait introduire en Algérie d'abord un certain nombre de ces oiseaux on rendrait à cette colonie et aux autres un service réel, car le Serpentaire se chargerait de purger le sol où on le transporterait des reptiles nombreux qui causent chaque jour tant de calamités.

Nous recommandons aussi de porter la plus vive attention sur les diverses espèces de Grues, et principalement sur la *Caronculée*, qui, comme le Serpentaire, détruit un nombre infini de reptiles.

Comme ce dernier elle vivrait dans les mêmes climats et s'y reproduirait: celles que nous avons eues en notre possession se nourrissaient de viande, de reptiles, d'insectes et même de grains.

On la trouve dans les plaines arides surtout sur la côte est, presque toujours isolée excepté vers la saison des amours. Mais, dès que les jeunes sont en état de reproduire, la famille se disperse. Il en est de même des jeunes Serpentaires qui sont chassés par leurs parents lorsque l'âge leur permet de s'accoupler, ce qui n'a lieu qu'à la seconde année. Comme il y a généralement mâle et femelle dans la même couvée, ils ne se quittent pas et imitent leurs parens en se choisissant un domaine convenable, souvent à une grande distance du lieu de leur naissance.

Nous saisissons cette occasion pour signaler aux Ornithologistes la différence que nous avons observée dans les Serpentaires de la partie orientale de l'Afrique, car ici ils sont d'une taille inférieure et d'une teinte beaucoup plus pâle en tout, différence qui nous semble par sa constance devoir former une espèce distincte, pour laquelle nous proposerions le nom de *Serpentarius orientalis,* si elle était reconnue comme telle.

Paris, le 9 septembre 1856,
17 Rue St. Louis, au Marais.

4. ON THE AUSTRALIAN DUGONG (HALICORE AUSTRALIS).
BY MR. FAIRHOLME.

Moreton Bay, on the east coast of Australia (lat. 27° S), is a region of great interest to the zoologist. The southern end of it is formed by two long islands, extending together about sixty miles, within which the Bay is studded with a number of beautiful islets. On the small island of St. Helena, one of those vast congregations of

flying foxes takes place, which I have endeavoured to describe in a former paper.

The Dugong (*Halicore australis*) is still found there in considerable numbers, though I fear it is rapidly decreasing, as the chase of it in whale-boats manned by natives forms one of the great attractions of the Bay.

The blacks prefer the flesh and blubber to any other food, and the white people have found in its oil qualities similar to those of cod-liver oil, having used it successfully in some cases of consumption or debility. The native name for the Dugong is "Yungan." It is about 9 or 10 feet long when full-grown, and contains from five to eight gallons of oil. It feeds on a grass-like sea-weed growing on the large flats of the Bay, some parts of which are exposed at low water. As the tide recedes, the Dugongs retire into deeper water from the feeding-grounds. The natives tell us, that before white people came amongst them, and introduced boats and harpoons, they used to catch "yungan" by placing large nets across the channels through which they knew the animals would pass from the feeding-grounds. Since the establishment of a Pilot Station at Moreton Bay, the blacks have acquired great dexterity in the use of the whale-boat and harpoon, and are now constantly employed in the pursuit, either for themselves as food, or for Europeans, who collect the oil for sale. The chase is conducted with great caution and silence. The harpooner stands in the bow, and directs the steersman by the movement of the hand. As the Dugong must rise at intervals to blow, he endeavours to calculate the exact spot of rising, and launches the harpoon as it reaches the surface. Having only a short rope to the harpoon, the Dugong often drags the boat with considerable velocity, but is very soon exhausted.

The blacks have a grand feast over one, stripping off the whole of the flesh and blubber in one large sheet, leaving the carcass entire. Thus anyone wishing to procure skeletons entire could do so by going amongst the natives with a supply of tobacco and a little flour, as the Moreton Bay tribe has always been very friendly with the whites.

I regret to say that some entire skeletons which were being sent to England by a friend of mine, were placed with a large collection of shells in a vessel which was unfortunately burnt.

I have no doubt that the Dugong abounds in the bays and straits north of lat. 27°; but in none of these will the same facility be offered of procuring specimens as at Moreton Bay, where the blacks are so friendly, and are so well acquainted with the habits of this animal.

5. THE BLACKS OF MORETON BAY AND THE PORPOISES.

BY MR. FAIRHOLME.

Between the two long islands which form the south part of Moreton Bay, is a passage known as the South Passage, formerly used for ships entering the Bay, but now given up. Near the deserted Pilot Station at Amity Point, some of the natives may constantly be found during the warmer months of the year fishing for "Mullet," a very fine fish about the size of a mackerel. In this pursuit they are assisted in a most wonderful manner by the Porpoises. It seems that from time immemorial a sort of understanding has existed between the blacks and the Porpoises for their mutual advantage, and the former pretend to know all the Porpoises about the spot, and even have names for them.

The beach here consists of shelving sand, and near the shore are small hillocks of sand, on which the blacks sit, watching for the appearance of a shoal of Mullet. Their nets, which are used by hand, and are stretched on a frame about 4 feet wide, lie ready on the beach. On seeing a shoal, several of the men run down, and with their spears make a peculiar splashing in the water. Whether the Porpoises really understand this as a signal, or think it is the fish, it is difficult to determine, but the result is always the same; they at once come in towards the shore, driving the Mullet before them. As they near the edge, a number of the blacks with spears and hand-nets quickly divide to the right and left, and dash into the water. The Porpoises being outside the shoal, numbers of fish are secured before they can break away. In the scene of apparent confusion that takes place, the blacks and Porpoises are seen splashing about close to each other. So fearless are the latter, that strangers, who have expressed doubts as to their tameness, have often been shown that they will take a fish from the end of a spear, when held to them.

For my own part I cannot doubt that the understanding is real, and that the natives know these Porpoises, and that strange Porpoises would not show so little fear of the natives. The oldest men of the tribe say that the same kind of fishing has always been carried on as long as they can remember.

Porpoises abound in the Bay, but in *no other part* do the natives fish with their assistance.

6. MOLLUSCA NOVA COLLECTIONIS CUMINGIANÆ, DESCRIPTA A GUILIELMO DUNKER, MARBURGENSI.

1. TROCHUS FLAVIDUS.

Tr. testa conica, solidula, unicolore pallide flavida, nitida; apice acuto, granoso; anfractibus lævigatis planis 10, *infera superaque suturæ parte cingulo elevato instructis; striis incrementi tenerrimis; anfractu ultimo obtuse angulato; basi convexiuscula sulcis quinis notata; apertura subtetragona.*

Patria ignota.

Species *Trocho dubio*, Phil., affinis est, qui vero colore olivaceo, pictura albo vel rufo flammulata, testa majore et latiore, anfractu ultimo magis angulato statim dignoscitur. Specimen, quod esset unicum 5 lin. altum, 4½ latum est.

2. TROCHUS PALLIDULUS.

Tr. testa conica, lævigata, in apice acuta ibique granulosa, flavida, lineolis pallide luteis picta; anfractibus 10 *planis ad suturam prominulis ideoque subimbricatis, superioribus cingulo obsoleto notatis, ultimo in circuitu rotundato; basi convexa, in medio sulcis nonnullis spiralibus arata; apertura subtetragona.*

Patria ignota.

Altitudo testæ 7 lin. ejusque diametros 5 lin. Species nostra a *Trocho Laugieri,* Payr., in primis differt colore, testa tenuiore et majore.

3. TROCHUS FLAMMIGER.

Tr. testa conica, solida, glabra, flavo-albida, lineis undulatis vel flammulis luteis picta; anfractibus plano-convexis 10, *sutura distincta divisis, ultimo in circuitu obtuse angulato; basi convexiuscula unicolore lutea, in medio alba, sulcis paucis umbilicaribus signata; apertura rotundato-tetragona.*

Patria ignota.

Species forma sua *Trocho,* qui antecedit, similis, pictura et testa solida differt.

Hæ tres species ad genus Leachanum *Zizyphinus* dictum—idem, quod *Calliostoma,* Sow.,—pertinent.

4. BULLIA CUMINGIANA.

B. testa angusta, subulato-turrita, flavo-albida, partim subcærulescente; anfractibus 10–11 *convexiusculis, sutura satis profunda divisis, superioribus longitudine costatis transversimque cancellatis, inferioribus obsolete striatis, infra suturam creniferis, ultimo subinflato* $\frac{2}{5}$ *totius testæ æquante; labro externo sulcis striisque incrementi notato; columella arcuata; faucibus albis.*

Patria ignota.

Hæc species, pæne 13 lin. longa, *Bulliæ turritæ,* Gray (Zool. of Beechey's Voyage, p. 126), peraffinis, ad genus *Leiodomus* Swainsoni pertinet, quod vero non satis firmatum esse videtur.

5. BULLIA ELEGANS.

B. testa solida, pallide lutescente, elongato-turrita, in apice obtusa; anfractibus 8 *planiusculis, lævibus, politis, sutura profunda callosa interdum castanea disjunctis, in superiore parte pliciferis, plicis albis sulco spirali cancellatis ideoque nodulis geminis instructis, ultimo tenuilirato ad basin carina pallide fusca notato, dimidia totius testæ parte paullo breviore; labro incrassato lævissimo columellaque parum sinuata albis; faucibus fuscis.*

Patria ignota.

Hæc Bulliarum species elegantissima Buccino Natalensi Kraussano certe peraffinis, statura majore, testa solidiore, labro incrassato intus lævissimo plicisque sulco spirali quasi binodoso distinguenda est.

6. PLEUROTOMA CONCINNA.

Pl. testa acute-turrita, subfusiformi, solidula, unicolore rufescente, in rostro rosea, costulis lineisque elevatis cincta ; anfractibus circa 10 *perparum convexis, sutura haud distincta sejunctis, ultimo spiræ altitudinem pæne æquante ; canali subobliquo ; labri incisura profunda.*

Patria ignota est.

Testa circiter 12 lin. longa, 3⅔ lin. lata, elegantissimarum una est sui generis ; anfractus ultimus costulis multis validioribus et subtilioribus cinctus est ; costa, si a sutura inde numeras, secunda, quæ labri fissura terminatur, tuberculorum undulatorum serie duplici cingitur. Costularum interstitia sub vitro oblique clathrata vel reticulata apparent.—Cochlea nostra ad Pleurotomas proprie sit dictas pertinens, habitu pæne *Pleurotomæ virginis,* Lam., sed multo minor, colore rufescente et imprimis rostro roseo ab aliis speciebus primo obtutu facile distinguenda est.

7. TROPHON MORRISI.

Tr. testa solida, ovato-fusiformi, in apice acuta ; anfractibus convexis longitudine plicatis transversimque tenuicostatis et liratis, ultimo subventroso ceteris longiore ; labro sulcato ; cauda brevi, subrimata ; canali aperto, paullum incurvo.

Patria ignota.

Testa 14 lin. longa, 7½ lin. lata, ovato-acuta, subfusiformis. Anfractus 7 convexi sutura profunda disjuncti, plicis vel costis 10 æquidistantibus et liris transversis cingulisque elevatis instructi. Apertura ovata in canalem brevem apertum sensim transit. Color totius testæ albus ; apicem versus flavescit. Fauces fasciis tribus fuscis notatæ sunt. An *Murex costularis,* Lam. Enc. Méth. 419. f. 8 ? Varices 7 indicat auctor : in figura 10 numerantur. Species *Fuso cinereo,* Say, Amer. Conch. t. 29, sane peraffinis, testa multo majore, anfractibus tumidioribus ideoque sutura profundiore et sculptura distinctiore satis discrepare videtur.

8. COMINELLA ELONGATA.

C. testa ovato-acuta, subfusiformi, costis inæqualibus subnodosis lirisque subtilioribus cincta, griseo fuscoque variegata ; anfractibus convexis ; labro sulcato ; labio superne uniplicato ; canali longiusculo, paullulum incurvo.

Patria ignota.

Hæc species magnitudine et statura elongata fusiformi insignis, 22 lin. longa, 9 lin. lata est. Anfractus 7 convexi infra suturam haud profundam paullo appressi, costis numerosis plus minusve distinctis subnodosis cinguntur : ultimus eorum circiter ⅗ totius testæ adæquat ; apertura angusta ; labrum intus incrassatum et sulcatum ; labium superne plica vel potius costa unica valida in tuberculum obsoletum exeunte instructum. Pictura parum insignis : fundus albidus et lutescens strigis maculisque irregularibus variegatus est ; fauces fuscescentes ; labrum album. *Fusorum* genus plica columellæ deficiente satis distinctum est, ne dicam de ipsius animalis natura.

9. ADAMSIA TYPICA.

A. testa crassa, ponderosa, ovato-acuta, subturrita, longitudine plicato-costata, costulis minutissimis confertis scabris subsquamosis æquidistantibus cincta, albida, passim subrosea, fusco cingulata, cingulis in costarum interstitiis magis conspicuis; anfractibus 7 convexis, ultimo circiter $\frac{3}{5}$ totius testæ æquante; cauda brevi, truncata; labro acuto, paullulum expanso, intus sulcato et incrassato; apertura angusta; columella lævissima; faucibus lacteis.

Patria: ad Philippinarum insulas habitare dicitur hæc cochlea.

Species 15 lin. longa, 8 lin. lata, ad hoc usque tempus certe rarissima, ad *Cominellas* maxime accedit, a quibus vero aperturæ indole valde differt, cum costa valida in labii superiore parte insidente, qua *Cominellæ* insignes sunt, hæc cochlea plane careat. Præterea sculptura et totus testæ habitus tam singularis est, ut eam pro novi generis typo habendam esse putaverim.

10. PURPURA FASCIATA.

P. testa ovata, solidiuscula, subgrisea fusco fasciata; spira exsertiuscula, acuta, subgradata; anfractibus tumidis, supra carinatis, transversim costulatis, costulis aperturam versus subimbricatis, anfractu ultimo ceteris pæne triplo majore, tumido, bicarinato, carinis nodiferis; apertura pallide fulva; labro acuto, intus sulcato, sulcis in margine fuscis.

Patria ignota est.

Species elegans 12 lin. longa; præsertim fasciis vivide fuscis in fundo griseo-rubente insignis, ab omnibus quas novimus *Purpuris* veris satis distincta est.

11. CYTHEREA SUBTRIGONA.

C. testa solida, ovato-trigona, modice convexa, concentrice obsoleteque striata, pæne lævi, inæquilatera, antice brevi subtruncata, postice producta, cuneiformi, carina obtusa ab umbonibus prominentibus ad latus posticum decurrente; lunula lanceolata.

Patria ignota.

Species subtrigona, circiter 2 poll. longa, antice brevis, alta, postice producta et attenuata. Margo cardinalis anticus et posticus pæne rectilinei et valde declives sunt; margo basalis anticus linea pæne orbiculata terminatus est. Umbones subacuti se invicem fere tangentes valde porrecti sunt. Area lata subcordiformis, lunula lanceolata fossula levi circumscribitur. Ligamentum crassum breve. Cardo dentibus validis munitus est; dentes mediani vel primarii longiores sunt ut in *Cythereis* solent; dens lateralis posticus subtiliter granulato-striatus. Impressiones et linea palliaris ut in *Cytherea lusoria* pæne se offerunt. Color internus albus in dorso violaceus est. Statu integro testa ab epidermide cornea tegitur. Long., alt. et crass. ratio hæc est: 100, 86, 48.

12. PECTUNCULUS GRAYANUS.

P. testa suborbiculari, convexa, solida, inæquilaterali, subglabra, *alba, pallide rubente et carneola, flammis rufis lineolisque numerosis acute angulatis varie picta, epidermide villosa induta, intus sordide alba, musculis pallioque fuscis; umbonibus tumidis.*

Longitudo speciminum majorum 25 lin. Long., altit. et crass. ratio hæc est: 100, 88, 62.

Patria Nova Seelandia. Attulit clar. Earle.

Testa hujus speciei transversa, suborbicularis antice rotundata brevis, postice paullum attenuata et longior, concentrice obsoleteque striata, lineis radiantibus subtilissimis confertissimis instructa pæne glabrata; umbones tumidi. Color et pictura aliis *Pectunculis* respondent, flammulæ lineæque acute angulatæ rufæ in fundo albido et rubente umbones inflatos versus sensim clariores fiunt. Color internus albidus in regione pallii et musculorum fuscus est. Musculi in speciminibus adultis valde elevati apparent. Crenæ in valvarum margine basali crassæ utrinque sensim minores evadunt, in regione musculorum plane evanescunt. Cardinis dentes laterales crassi, mediani obsoletissimi vel evanidi. Epidermis villosa plurimam partem detrivit. Ligamenti area parva.

Inter *Pectunculos*, qui nobis innotuerunt, hæc species ad *Pect. flammeum*, Reeve (Proc. Zool. Soc. 1843), maxime accedit.

7. MYTILACEA NOVA COLLECTIONIS CUMINGIANÆ, DESCRIPTA A GUIL. DUNKER.

1. MYTILUS SPLENDENS.

M. testa elongato-ovata, concentrice striata; epidermide splendente fusca et nigricante in mediis valvis viridi; pagina interna livido-rubente, marginem inferiorem et posticum versus albida, margaritacea; umbonibus tumidis, gibbosis.

Hab. Ad litus Peruanum.

Concha magnitudine *Mytili edulis* ambitu variat, nam modo est elongato-subtrigona, modo ovata. Umbones valde tumidi et gibbosi sub epidermide rubentes. Epidermis nitida maximam partem obscure fusca, in mediis valvis vivide viridis vel e viride nigricans, interdum zonis fuscis et virescentibus variegata. Sub vitro lineolæ subtilissimæ undulatæ ab umbonibus radiantes conspiciuntur. Cardo prorsus edentulus, margo totus simplex, ab epidermide late involutus. Fossula ad ligamentum recipiendum haud profunda.

2. MYTILUS ROSTRATUS.

M. testa ovato-acuta, ventrosa, solida, unicolore fusco-violacea, longitudinaliter costata, costis mature furcatis; epidermide nigra; apicibus rostriformibus extrinsecus curvatis; cardine dentibus nonnullis munito.

Hab. In litore insulæ Van Diemen.

Testa 20½ lin. longa, 8½ lin. alta, 7 lin. lata. Altitudo maxima in mediis valvis sita est. Valvarum ambitus plus minusve ovatus, ita ut nullibi angulus distinctus sit et margines unus in alterum sensim transeant. Pars media basalis semper est ventrosa. Costæ ab apicibus acutis rostriformibus exeuntes, in omni incrementi stadio pluries diffinduntur marginem posticum versus sæpius evanescentes. Totus margo crenulis circumdatur. Cardo denticulis duobus vel tribus in utraque valva munitus est; interdum denticulus unus dextræ valvæ a tuberculis duobus sinistræ recipitur. Ligamentum crassum et latum satis profunde immersum est. Pagina interna parum nitet.

Species nostra *Mytilo purpurato* (*Modiolæ*, Lam.) affinis, qui testa minore, solidiore, apicibus obtusis, cardine tenerrime crenato, costis crassioribus aliisque notis differt.

3. MYTILUS HORRIDUS.

M. testa magna, crassa, oblique ovata, postice dilatata, modice convexa, concentrice plicoso-striata, alba, epidermide fusca lamellosa, postice horride barbata vestita; umbonibus magnis, obtusis, curvatis; dorso et latere postico æqualiter arcuatis, basi antice valde sinuata.

Hab. In litore Novæ Hollandiæ septentrionali.

Concha magna, crassa, 60 lin. longa, 32 lin. alta, 20 lin. lata est. Margo dorsalis arcum æqualem formans, in marginem posticum pæne circularem sensim transit. Margo ventris antice valde sinuatus est. Umbones obtusi, inflexi et disjuncti, ætate progrediente erosi. Epidermis crassa lamellosa in postico conchæ latere pilis et setis horridis obducta est. Ligamentum crassum pro magnitudine testæ breve. Cardo prorsus edentulus. Color paginæ internæ sordide albus languidus, omni pæne nitore margaritaceo caret. Species hæc magnifica a *Mytilo torto*, Dkr., præsertim rima recta distinguitur.

4. MYTILUS ATROPURPUREUS.

M. testa oblongo-ovali, subtrigona, modice convexa, purpurea, epidermide atra obducta, concentrice striata, sulcis radiantibus subtilissimis confertissimis exarata; dorso subcompresso, in medio æqualiter curvato, interdum angulato; umbonibus terminalibus subtumidis, incurvis paullulum distantibus; margine basali anterius plus minusve sinuato; cardine utriusque valvæ denticulis nonnullis munito.

Hab. In Africa occidentali. Suspicor hanc speciem in aqua dulci vel semisalsa vixisse, nam ejusdem byssus contexta est cum *Melania* cujusdam fragmentis.

Concha adulta 15 lin. longa, 9 lin. alta, tenuis, habitu inconstans, formam *Mytili edulis* junioris interdum refert. Testa tota purpurea aut fusco-purpurascens, intus iridescens, epidermide nigerrima nitida vestita, sulcisque radiantibus plurimis confertissimis 150 usque ad 160 instructa est, qui quidem sulci in regione apicum partim dichotomi sunt et valvarum marginem versus validiores fiunt. Apices in speciminibus adultis decorticati et erosi, margarita splendente insignes sunt. Quot sulci, tot crenulis margo circumdatur.

Mytilus niger, Gmel. p. 3362, le *Dotel* Adansonii (Hist. du Senég. p. 211. t. 15. f. 3) certe species peraffinis est, sed illius testa sub epidermide nitidissime lactea vocatur. Præterea "le Dotel" major, minore sulcorum numero instructus est, nam centenos tantum sulcos in eo numeravit auctor.—Clar. Sylv. Hanley in describendo *Mytilo nigro* (An Illustr. and Descr. Cat. of Recent Shells, pt. ii. p. 245 ?) nostram ipsam concham ante oculos habuisse videtur.—*Mytilus striatulus*, L. Schröt. Einl. vol. iii. p. 449. t. 9. f. 16, statura aliena striisque in latere basali deficiendibus imprimis distinguendus esse videtur. *Mytilus tenuistriatus*, Dkr. Moll. Guin. p. 47. t. 9. f. 1, 2, 3, species multo minor, ad *Volsellas* pæne accedit.

5. MYTILUS MORRISI.

M. testa ovato-trigona, modice convexa, fusco-purpurea, epidermide cornea vestita, concentrice striata, costulis confertis granosis mature furcatis sculpta; dorso parum compresso, subangulato; umbonibus terminalibus incurvis; margine baseos fere recto; cardine utriusque valvæ denticulis nonnullis instructo; marginibus crenis parvis circumdatis.

Hab. Ad Guineam.

Testa formam *Mytili atropurpurei* pæne refert, sed habitu minore, costulis granosis mature furcatis et epidermide obscure cornea facile distingui potest. *Mytilus senegalensis*, Lam., valvis angustis et margine dorsali postico basi subparallelo imprimis differt.

6. MYTILUS ADAMSIANUS.

M. testa ovato-trigona, utrinque obtuse carinata, solidula, costis mature bifidis eleganter granosis sculpta, fusco-purpurascente et albida; epidermide cornea vestita; umbonibus terminalibus; margine crenato.

Hab. Ad Isthmum Panamense (*Cuming*).

Testa parva 10 lin. longa, 5½ lin. alta, 4½ lin. lata, *Mytilo Magellanico* juvenili similis est, sed costulis confertis altioribus, distinctissime granosis facile distinguitur. Margo basalis pæne rectilineus. Color utrinque fusco-purpurascens, venter albidus. Facies interna albida, marginem versus livida et vivide margaritacea. Fossula ad ligamentum recipiendum satis profunda. Apices acuti terminales. Cardo in valva sinistra dentibus duobus, in dextra unico tantum instructus.

7. MYTILUS OBSCURUS.

M. testa ovata, parva, solidula, concentrice obsoleteque striata, albida, aliquantulum rufescente, epidermide obscure cornea opaca vestita; apicibus obtusis incurvis sæpius decorticatis, paullo distantibus; facie interna parum margaritacea; cardine prorsus edentulo; extremitate antica intus paullulum excavata.

Hab. Ad Sydney urbem Novæ Hollandiæ.

Concha parva 10½ lin. tantum longa, 6 lin. alta et 4½ lin. lata, *Mytilo eduli* nondum adulto, qui pellucidus Penn. dicitur, haud dissimilis est.

8. MYTILUS CURVATUS.

M. testa parva, solidula, subtrigona, rufo-violacea, in dorso alta, in basi valde arcuata, costulis dichotomis instructa; epidermide fusco-cornea vestita; umbonibus parvis inflexis; toto margine excepta fissura crenulato; cardine in valva utraque denticulis duobus vel tribus munito.

Hab. Ad Philippinarum insulam Luzon.

Conchula parva, vix 6 lin. longa, 4 lin. alta, $2\frac{3}{4}$ lin. lata, forma pæne trigona insignis. Margo cardinalis declivis leviter arcuatus cum margine posteriore alto angulum obtusum format; margo basalis in fissura, quæ ad byssum emittendam destinata est, valde curvata. Umbones perparum recedentes. Costulæ furcatæ marginem versus posticum distinctiores evadunt. Fossula ad ligamentum recipiendum satis profunda. Pagina interna marginem versus vivide iridescens.

9. VOLSELLA GUBERNACULUM.

V. testa ovata, valde fornicata, utrinque subangulata, concentrice rugoso-striata, pallide flavescente, virgis inæqualibus violaceis radiata, epidermide cornea vestita; umbonibus prominentibus incurvis violaceis perparum distantibus; ligamento brevi.

Patria ignota.

Testa subsolida, antice attenuata, postice lata et rotundata, 18 lin. longa, 11 lin. alta, $8\frac{1}{2}$ lin. lata, præsertim dorso valde fornicato et basi parum sinuata pæne recta insignis est. Umbones incurvi violacei, nitentes, glabrati marginem anticum previssimum eminent. Ligamentum pro magnitudine testæ breve, paullo immersum est. Color valvarum internus pallide luteus, umbones versus violaceus.

10. VOLSELLA ARATA.

V. testa elongata, subrhombea, tumida, liris costisque postice crassioribus arata, colore antice lacteo vel pallide rubente, postice fusco-violaceo, epidermide crassa obscure cornea.

Hab. In Novæ Hollandiæ litore septentrionali.

Concha 29 lin. longa, 12 lin. alta, $10\frac{1}{2}$ lin. crassa, quoad formam *Volsellæ rhomboideæ*, Hanl., affinis est. Valvæ linea obliqua pallida ab umbonibus tumidis ad posticam baseos partem paullo sinuatam decurrente et colore duplici in duas partes dividuntur. Striæ incrementi, et parte fissæ, inde a linea illa obliqua validiores fiunt, ita ut testa sulcis exarata appareat. Facies interna nitorem margaritaceum languidum præbet. Ligamentum angustum longum totum pæne marginem cardinalem tenet.

11. VOLSELLA FORTUNEI.

V. testa parvula, ovato-oblonga, subtrigona, utrinque obtuse carinata, concentrice rugose striata, superius violacea, inferius albida, epidermide virente obducta; margine baseos subrecto; dorso subangulato; umbonibus parvulis prominulis.

Hab. Mare Chinense. Attulit clar. Fortune.

Conchula parva, $5\frac{1}{2}$ lin. longa, $2\frac{3}{4}$ lin. alta, 2 lin. lata, habitu *My-*

tili minimi, sed umbonibus recedentibus magis ad *Volsellas* accedit. Striæ concentricæ antice rugosæ. Cardo plane edentulus. Ligamentum longum et tenue. Pagina interna superius pulcherrime violacea et margaritacea.

12. VOLSELLA SUBPURPUREA.

V. testa elongato-ovali, angusta, tenui, subpurpurea, epidermide cornea nitida induta, concentrice tenerrimeque striata, striis obsoletissimis ab umbonibus radiantibus marginem posticum versus evanescentibus instructa, antrorsum angustata, posteriorem partem versus parum dilatata, in medio dorso subfornicata paullulum angulata, margine baseos subsinuata ; umbonibus parvis, in speciminibus adultis decorticatis parum prominentibus.

Hab. In Senegallio flumine.

Testa 15 lin. longa, $5\frac{3}{4}$ lin. alta, $5\frac{1}{4}$ lin. lata, sculptura, colore et cardinis structura *Volsellæ tristi* affinis, præsertim margine cardinis multo longiore, basi subsinuata et valvis tumidioribus differt.

13. VOLSELLA TRISTIS.

V. testa elongata, recta, tenui, fusco-purpureo et albido variegata, concentrice obsoleteque striata, pæne glabrata, sulcis ab apicibus radiantibus confertissimis, tenuissimis, sub vitro tantum perspicuis, instructa ; epidermide nitida cornea vestita ; facie interna albida et livida marginem versus iridescente.

Hab. Ad Chusan teste Benson.

Concha forma angusta, longe porrecta insignis, $15\frac{1}{2}'''$ longa, $6\frac{1}{4}'''$ alta et $4\frac{1}{4}'''$ crassa est. Altitudo ejus maxima in $\frac{1}{3}$ longitudinis vel eo in loco sita est, ubi margo dorsalis anticus, quem ligamentum breve et tenue occupat, finem habet. Margo ventralis perparum arcuatus pæne rectus, antrorsum paullo adscendit et mucrone vel potius ala parvula parum ultra apices prominente terminatur, in qua costulæ nonnullæ observantur. Præterea monendum est, marginem dorsalem plicis nonnullis obsoletissimis instructum esse. Internus testæ color livido-albus parum margaritaceus. Cardo utriusque valvæ sub apicibus dentibus parvulis 4–5 munitus. Præterea in fine ligamenti, quod fossulam haud profundam tenet, crenarum 10–12 series observari potest, quæ *Nucularum* cardinem in mentem vocant.

14. VOLSELLA PERFRAGILIS.

V. testa elongata, recta, compressa, tenerrima, subdiaphana, parum splendida, pallide cornea, postice virescente maculisque minimis pallide fuscis aspersa, striis incrementi concentricis tenuissimis instructa, costa obsoletissima recta ab umbonibus prominulis ad posticam baseos partem decurrente, margine dorsali recto longissimo, margine ventrali antice ascendente ; ligamento perlongo, angusto, margarita marginem posteriorem versus iridescente.

Hab. Ad insulas Moluccenses.

Species singularis sesquipollicem longa, dimidium alta, 3½ lin. crassa, *Modiolæ eleganti*, Gray (Spic. Zool. t. 6. f. 14; Wood, Ind. p. 235), affinis, margine dorsi recto, umbonibus minoribus, testaque compressa præsertim differt.

15. VOLSELLA UNDULATA.

V. testa oblonga, fragili, concentrice tenuissimeque striata, glabra, nitida, pellucente, albida, picturis undulatis variegata lineisque rufis ab umbonibus minutis ad latus posticum decurrentibus ornata, ventre plerumque unicolore; epidermide tenera virente; margine baseos postice aliquantulum sinuato, pæne recto; dorso postice fornicato.

Hab. Ad insulas Moluccenses.

Testa 11 lin. longa, 5 lin. alta, 3 lin. lata, ad *Volsellam Japonicam* proxime accedit, sed statura breviore et basi subsinuata imprimis differt.

16. VOLSELLA JAPONICA.

V. testa oblonga, recta, convexa, tenui, nitida, concentrice tenuissimeque striata, pæne prorsus glabra, alba, maculis undulatis et angulatis rufis varie picta lineisque ab umbonibus gracilibus prominulis incurvis ad latus posticum radiantibus ornata, margine dorsali et basali fere rectis; ligamento longo, angusto; epidermide tenera pallide cornea subvirente.

Hab. In litore maris Japonici.

Concha gracilis 15 lin. longa, 7 lin. alta et 3½ lin. crassa, splendore et pictura elegantissima insignis est.

17. VOLSELLA GLABERRIMA.

V. testa oblonga, recta, tenui, convexa, nitidissima, subpellucida, concentrice obsoletissimeque striata, glaberrima, fusco-cornea, subviolacea, picturis undulatis fuscis, zonis concentricis lineisque gracilibus pallidis ab umbonibus prominulis ad latus posticum radiantibus ornata; epidermide tenui virescente vestita; margine cardinali recto; ligamento longo, angusto, immerso; margine basali leviter arcuato.

Hab. Mare Australe prope urbem Sydney.

Species *Vols. Japonicæ* affinis, sed valvis majoribus et latioribus vel potius altioribus, margine ventris magis arcuato et lineis radiantibus pallidis in fundo obscuriore satis diversa.

18. VOLSELLA INCONSTANS.

V. testa tenui, ovato-oblonga, antice ventrosa, lateribus oblique obtuseque carinata, concentrice idque tenerrime striata, pæne lævi, albida, in dorso interdum violaceo lividove maculata, vel tota violacea, epidermide cornea, tenui, nitida vestita; umbonibus tumidis, sæpius decorticatis.

Hab. In litore insulæ Van Diemen.

Concha pro ætate variabilis. Testa enim junior brevis plerumque marginem basalem rectum vel adeo leviter arcuatam ostendit, ætate vero progrediente valvæ marginem baseos posticum versus extenduntur, quo fit, ut venter sinum levem formet. Pars valvarum antica umbonibus rotundatis valde productis habitum *Lithophagorum* præ se fert. Carina obtusa ab umbonibus ad latus posticum decurrens, in adultis speciminibus distinctior esse solet, quam in pullis. Ligamentum tenue et angustum. Testa si epidermis detrivit, splendorem margaritaceum sæpius offert. Cardo denticulis plane caret. Specimen quod exstat maximum 13 lin. longum, 6 lin. altum et 5 lin. latum est. Valvæ nonnullæ antice costulis duabus obsoletissimis notatæ sunt.

19. VOLSELLA SUBSULCATA.

V. testa ovato-oblonga, tumida, alba, in dorso livido- vel rufo-fusca, utrinque costulata, costulis granosis, nonnullis furcatis, in dorso oblique divaricatis; epidermide fusco-cornea, postice setigera; carina obtusa ab umbonibus parvis ad latus posticum decurrente.

Hab. Ad Philippinarum insulam Manilam.

Hæc concha 13 lin. longa, 6½ lin. alta, 5½ lin. lata inter *Volsellam setigeram*, Dkr. et *sulcatam*, Lam., quasi intermedia est species. Testa habitu varians carina obtusa ab umbonibus decurrente plus minusve conspicua instructa est. Umbones plerumque decorticati, parvi, obtusi. Costulæ granosæ in dorso et latere postico magis perspicuæ sunt, quam in latere ventris, ubi sensim evanescunt, exceptis iis costulis paucis, quæ ante umbones jacent. Testa semper est duplici coloris, dorsum livido- vel rufo-fuscum, venter paullo sinuatus albus. Facies interna in speciminibus adultis impressiones musculares fortes ostendit. Cardo denticulis nonnullis munitus est. Excepta baseos parte aliquantulum sinuata totus margo crenis parvulis circumdatur. Ligamentum crassum profunde immersum est.

20. VOLSELLA SETIGERA.

V. testa ovato-oblonga, tumida, subcylindrica, concentrice striata, antice et postice tenuiter sulcata, alba, epidermide viridi-cornea, postice setigera induta, setis brevibus sparsis; umbonibus tumidis, incurvis; margine utrinque crenato.

Patria ignota.

Testa 12 lin. longa, 6 lin. alta, 5 lin. crassa est. Margo dorsalis paullo declivis postice in arcum levem sensim transit, margo ventris pæne rectilineus. Valvæ costulis subgranosis ab apicibus utrinque decurrentibus instructæ sunt; epidermis posticum valvarum latus versus, ab ea inde parte, ubi costulæ incipiunt, setis sparsis tegitur, quas quidem setas plerumque mutilatas invenies. Valvarum pars media transversim striata, basin versus subrugosa est. Hæc species forma haud insolita, costularum structura ad *Lanistinas* accedit.

21. VOLSELLA FLAVIDA.

V. testa oblonga, tenui, inflata, lineis concentricis tenuibus eleva-

tis sculpta, flavida, linea ab umbonibus ad basin oblique decurrente colore pallidiore signata; umbonibus tumidis; margine ventrali postice sinuato.

Hab. In sinu ad Manilam.

Testa tenuis et convexa, 16 lin. longa, 8 lin. alta, 6½ lin. lata est. Margo dorsalis anterior rectus, antrorsum paullo inclinatus, posticus arcuatus in extremitatem posticam basin versus productam sensim transit; margo ventris postice sinuatus, antice leviter arcuatus; extremitas antica rotundata ultra apices parum prosilit. Striæ concentricæ graciles distantes et elevatæ lineas concentricas subtilissimas sub vitro tantum conspicuas includunt.

Species *Modiolæ vestitæ*, Phil. (Enum. Moll. vol. ii. p. 51. t. 15. f. 12), affinis, testa paullulum longiore, tenuiore, parum splendente, epidermide pallidiore, forma graciliore postice magis producta, umbonibus minoribus striisque concentricis elevatis differt. Præterea nostra species tegumento tomentoso, a quo *Volsella vestita* includitur, prorsus carere videtur. Exstat varietas colore obscuriore, testa postice magis producta insignis.

22. VOLSELLA SPLENDIDA.

V. testa oblonga, inflata, alba, epidermide obscure castanea splendida obducta, concentrice striata; margine dorsali arcuato, subangulato, ventrali postice sinuato, extremitate antica parum producta, latere postico subdilatato rotundata; sulco levi colore pallidiore terminata ab umbonibus tumidis ad sinum baseos decurrente.

Patria California.

Testa 14 lin. longa, 8 lin. alta, totidem crassa, *Volsellæ vestitæ* nec non *flavidæ* affinis, valvis latioribus, colore obscuriore et sulco ab umbonibus decurrente imprimis differt.

23. MODIOLARCA (VOLSELLA) SUBTORTA.

V. testa parvula pæne inæquivalvi subtorta, ovata, subtrapezina, concentrice striata et rugosa, fusca, epidermide sublamellosa induta, dorso parum arcuato, basi antice parum sinuata, umbonibus parvulis recedentibus statu integro incurvis, extremitate antica producta.

Hab. In Novæ Hollandiæ litore septentrionali.

Species parvula angusta 4 lin. longa, 2 lin. alta, 1½ lin. lata, habitu et præsertim formatione extremitatis anticæ *Modiolarcam trapezinam* in mentem vocat. Valvulæ pæne inæquales subtortæ epidermide partem posticam versus sublamellosa teguntur. Apices in speciminibus adultis erosi sunt, imo specimina exstant, magnam partem decorticata. Ligamentum tenue profunde immersum est. Impressiones musculares fortes et pro exiguitate testæ magnæ sunt. Species nostra generi *Grayano Modiolarcæ* ut adnumeretur necesse est.

24. LANISTINA NANA.

L. testa minima, ovata, concentrice striata, pallide cornea, rufo *variegata, pellucida, sulco ab umbonibus parvulis ad basin decurrente insigni.*

Hab. Port Lincoln.

Testa minima, vix 2 lin. longa, tenuissima, pellucens, lineis rufis undulatis et reticulatis picta, antice et postice tenuiter costulata. Pagina interna margaritacea; margo cardinis tenuissime crenulatus.

25. LANISTINA CONCINNA.

L. testa parvula, fragili, ovata, modice convexa, flava lineis nonnullis præsertim apices versus undulatis et angulatis fuscis picta, epidermide viridi pellucente vestita, sulcis ab apicibus parvulis incurvis utroque latere radiantibus instructa.

Hab. Ad Philippinarum insulam Zeba (*Cuming*).

Species 7 lin. longa, $3\frac{1}{2}$ lin. alta, $2\frac{1}{2}$ lin. crassa, antice angustata, postice dilatata, paullulum compressa. Margo dorsalis æqualiter parumque arcuatus, basalis pæne rectilineus. Extremitas antica angusta arcuata, costulis nonnullis signata, ultra apices minutos incurvos prominens. Costulæ planæ marginem versus ex parte furcillatæ in latere postico 20–24 numerantur; interstitia earum latitudinem non excedunt.

Differt hæc species a *Modiola strigata*, Hanl. (Proc. Zool. Soc. 1844), testa minus convexa, postice magis dilatata, umbonibus haud tumidis costulisque latioribus planis partim dichotomis.

26. CRENELLA BULLA.

C. testa fragili, oblique elliptica, bullata, alba, striis tenerrimis confertissimis ab umbonibus radiantibus sub vitro tantum cognoscentibus undique instructa, epidermide tenuissima pallida obducta; umbonibus incurvis gracilibus anticis; ligamento brevi; toto margine intus subtiliter crenulato.

Hab. Ad Philippinarum insulam Luzon.

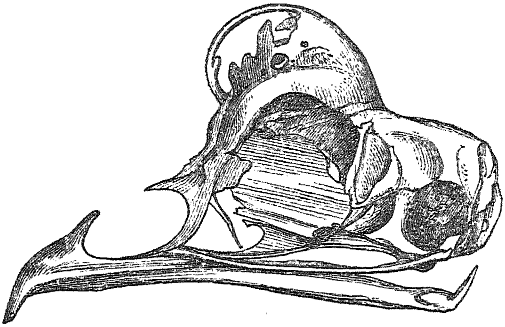
Testa tenuissima, perfragilis, pellucida, tota alba, 5 lin. longa, 4 lin. alta, 4 lin. crassa, subglobosa vel bullata, ambitum fere exacte ellipticum refert, si modo angulum obtusum, quem margo cardinalis posticus cum latere postico format, non respicis.

November 25, 1856.

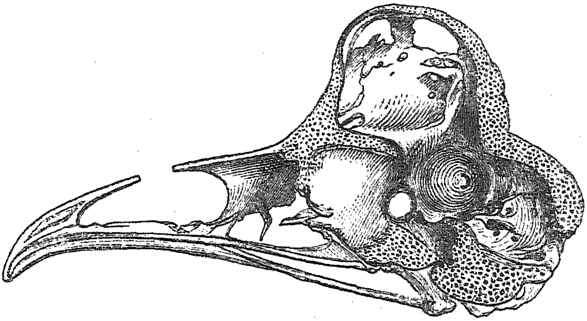
J. S. Gaskoin, Esq., F.L.S., in the Chair.

Mr. Tegetmeier brought before the notice of the Members living specimens and preparations illustrating the very remarkable peculiarities existing in the skulls of the feather-crested variety of the domestic Fowl, now known as Polish. In these birds, the anterior portion of the frontal bone is expanded into a large spherical tuberosity or cyst, which is partly osseous and partly membranous; the

anterior portions of the brain are entirely contained in this tuberosity, being protected from external injury solely by the feathers of the crest and the integuments; the posterior portions are situated, as usual, in the cavity of the cranium: as the communication between it and the tuberosity is constricted, the brain necessarily assumes the form of an hour-glass, the anterior being the larger portion.



No. 1.—Skull of Crested Hen (var. Golden-spangled Polish), showing spherical tuberosity and deficient intermaxillary bones.



No. 2.—Longitudinal vertical section of the skull of a Crested Cock (var. Silver-spangled Polish), showing the shape of the cavity containing the encephalon.

This very extraordinary structure, which is well developed even before the escape of the chick from the shell, was noticed by Peter Borelli in 1656, and again described with many errors by Blumenbach in 'De Nisus formativi Aberrationibus,' 1813. Blumenbach states that it is confined to the females, which is incorrect; that the fowls are remarkably stupid, whereas their instincts do not appear to differ in the slightest degree from those of the other non-incubating varieties of domestic fowl; and lastly, that the tuberosity is caused by a tight constriction of the integuments, which however does not exist.

Pallas, who also notices the peculiarity, erroneously attributes it to a cross with the Numidian meleagris; and the description of a very old specimen in the Catalogue of the Museum of the College of Surgeons, states it to be the result of disease, whereas it is the normal condition of all largely crested fowls.

An intimate connexion exists between the size of the tuberosity and that of the feathered crest, so that those chickens may be selected at birth that will eventually possess the largest crests.

The intermaxillary bones are usually more or less deficient in all the varieties of crested fowls, the nostrils arched, and the comb when present is crescentic or bicorned. Several of the varieties of crested fowls are destitute of fleshy wattles, their place being supplied by a ruff or beard of feathers; there is, however, no corresponding alteration in the lower maxillary bone.

Mr. Woodward exhibited preparations of the mantle and oral apparatus of the recent British Terebratula (*T. caput-serpentis*), specimens of which had been forwarded in a living state from Oban, Argyle, by J. Leckenby, Esq., of Scarborough. It appears that this shell, although a native of the deep sea, can live a week out of water, if placed in a bottle or tin-box with moist sea-weed. The valves are so accurately adjusted as to prevent the escape of the contained fluid. The mantle, arms and cirri of this species are frosted over with radiated *spicula,* composed of carbonate of lime, as described by Oscar Schmidt, and form a beautiful object for the polariscope. To the palæontologist this structural peculiarity is extremely interesting, as it explains the preservation of many parts of the internal organization, including the delicate *cirri* in fossil *Brachiopoda.*

Mr. Fraser exhibited a considerable number of Birds, from the collection of T. C. Eyton, Esq., and more particularly drew attention to a singular variety of *Ramphastos discolorus,* Linn., in which the blood-red colouring of the abdomen and upper tail-coverts was replaced by chrome-yellow.

The specimen was procured from Rio de Janeiro.

He next directed attention to a species of *Trogon,* which is so nearly allied to *Trogon collaris,* Vieill., that by most writers it might be considered as identical with, or a mere variety of that species. This bird, for which Mr. Fraser proposed the name of *Trogon Eytoni,* differs, however, in having the mandibles larger and more robust; the plumage of the neck and breast of a fine coppery bronze, instead of green; the central tail-feathers bronze instead of green; and the barring of the wing-coverts and lateral tail-feathers broader, and consequently more distinct.

Total length, $9\frac{1}{2}$ inches; bill, $\frac{7}{8}$; wing, $4\frac{3}{4}$; tail, $5\frac{3}{4}$.

Hab. Rio de Janeiro.

The third specimen was a fine species of *Juida* (which Mr. Fraser proposed to call *Juida Eytoni*), nearly allied to *Juida longicauda,* Swains., but differing from that species in having the whole of the body and wings of a fine oil-green, instead of bluish-green, and in having the velvety-black marks near the tips of the wing-coverts and scapularies more conspicuous than in that species; the lower parts of the back and upper tail-coverts of a lovely purple, changing into green on their edges and tips, in lieu of dark bronzy-purple; the band across the abdomen dark coppery-brown.

Total length, $19\frac{1}{2}$ inches; bill, $1\frac{1}{4}$; wing, 8; tail, 14; tarsi, $1\frac{3}{4}$.

Hab. W. Africa: precise locality unknown.

The Secretary read the following—

NOTICE OF A NEW SPECIES OF TRICHOTROPIS, FROM THE COLLECTION OF HUGH CUMING, ESQ. BY ARTHUR ADAMS, F.L.S., ETC.

TRICHOTROPIS GOULDII, A. Adams.

T. testa ovato-fusiformi, vix rimata, alba, tenui; spira elata; anfractibus septem convexis, liris elevatis, spiralibus et lamellis tenuibus longitudinalibus concinne cancellatis, interstitiis transversim striatis; apertura ovali, antice producta, canali obsoleta; labio lævi, rotundato, antice subreflexo; labro margine simplici, acuto.

Long. $1\frac{1}{2}$ poll.

Hab. Chiriqui, Veragua (*Mr. T. Bridges*). Mus. Cuming.

I have much pleasure in naming this elegant addition to the genus *Trichotropis* after the distinguished American conchologist Dr. Gould. In a recent state the shell is probably covered with a thin light-brown epidermis. It differs from the typical genus in the canal of the aperture being almost obsolete.

December 9, 1856.

Dr. Gray, F.R.S., in the Chair.

Professor Owen read a paper entitled "Osteological Contributions to the Natural History of the Chimpanzees and Orangs (*Troglodytes, Pithecus*), No. VI.," which will be published in the Transactions of the Society.

The following papers were also read:—

1. DESCRIPTION OF A NEW SPECIES OF CHELODINA FROM AUSTRALIA. BY DR. J. E. GRAY, F.R.S., ETC.

(Reptilia, Pl. XII.)

Mr. Stutchbury, who has recently returned from Australia, brought with him a series of animals which he collected during his geological researches.

In examining this collection with the intention of selecting those specimens which will be interesting additions to the very rich collection of Australian animals in the British Museum (including almost all the species described by Mr. Gould and other recent writers on the fauna of that continent), I was pleased to discover what appears to be a very distinct species of the Australian genus of Long-necked freshwater Tortoises (*Chelodina*).

To the description of this species I have added a short note on the peculiarities of two other species.

CHELODINA EXPANSA, n. s. (Pl. XII. adult and young.)

Shell oblong, rather depressed, broader behind, brown; plates thin, with short, narrow inosculating grooves; the margins flattened, expanded; the side of the back regularly convex; the lateral marginal plates rather broad, not revolute. The sternum flat, bluntly keeled on the sides, yellow. Head, neck and limbs dark olive above; chin, throat, and under side of the limbs whitish.

Shell, length 11, breadth 8 inches. Neck 8 inches long.

The young shell is like the adult, but the lateral margins are slightly revolute on the edges, though the plates are broad like the adult. The under side of the margin yellow, with a triangular black spot on the front edge of each shield; the dorsal shield thin, with three distant concentric grooves, with a rather rugose, moderate-sized areola; the areola of the costal plate subcentral; the areola of the first vertebral plate is subcentral, of the second, third, fourth and fifth vertebral plate it is on the middle of the hinder margin; the areola of the marginal plate is on the hinder outer margin. The front vertebral shield is large, and as broad as long; the others are much broader than long, the third being the shortest.

This species differs from *Chelodina longicollis*, *C. oblonga* and *C. Colliei*, in the generally expanded form, and especially in the breadth and non-revolution of the lateral margin, and in the side of the sternum not being so sharply keeled as in the two latter species.

It differs from *Chelodina sulcifera* in the membranous character of the shields, and also in the sternum being narrow in front, like that of *C. oblonga* and *C. Colliei*, and not expanded and broader, as in *C. longicollis* and *C. sulcifera*.

CHELODINA LONGICOLLIS.

A fine shell of the adult animal of this species, larger than any I have hitherto received, was in the collection.

The shell is rather convex and swollen on the sides, with a deep, broad, rounded concavity along the centre of the second, third and fourth vertebral plate, about two-thirds the width of the plates. The black sutural lines on the sternum are narrow and uniform.

Length of the shell 8½; width 6 inches.

CHELYMYS MACQUARIA.

Two adult specimens of this kind were also in the series. They are both much darker than the two specimens in the British Museum Collection. They are also peculiar for having a very distinct, deep, narrow, interrupted groove along the vertebral line, deepest and widest on the fourth vertebral plate. The discal shields are also marked with rather deep distinct radiating grooves, which are evidently indentations in the bones of the animal, only covered by the very thin skin-like shields.

Shell, length 11, breadth 8 inches.

2. ON SOME FISH FROM ASIA MINOR AND PALESTINE. BY SIR JOHN RICHARDSON, C.B., F.R.S. L. & ED. ETC.

Through the kindness of Dr. Gray of the British Museum, I have been permitted to examine a small collection of Fish made by H. Poole, Esq., in Palestine and Asia Minor. Though they do not present to the ichthyologist any novel generic forms, they are interesting on account of the localities in which they were found.

CYPRINODON HAMMONIS, Cuv. et Val. xviii. 169.

This small fish was taken in a marshy spot, on the immediate beach of the Dead Sea, at Usdum, the supposed site of Sodom. The marsh, which contained some very small puddles of salt-water in which the fish were swimming, and from whence they were scooped out with ease by the hands, is fed by a saline spring which issues a little higher up, and is so little above the level of the sea, that Mr. Poole believed that the fish were washed into the pools by the waves. The opinion that the exhalations of the Dead Sea are immediately fatal to animal life, and that not even a bird can fly over it, has long been exploded. One of Mr. Poole's companions bathed in it daily with impunity, and even fancied that in diving he had discovered the remains of a ruined city under its waters, opposite to Usdum. Mr. Poole also observed ducks diving in it, and concluded, justly we think, that they must have found something edible to induce them to repeat that act, which they did frequently.

Lieut. Lynch of the U. S. Navy examined the water of the Dead Sea (Exp. to Jordan, &c. p. 377) with a powerful microscope, and found that it contained no animalculæ and no vestige of animal matter. Its specific gravity was 1·13, compared with distilled water as 1·0, while water of the Atlantic from lat. 25° N. and 52° W. longitude was 1·02. Another examination of the water of the Dead Sea, quoted on the last page of Lieut. Lynch's book, gives its specific gravity as 1·227 at temp. 60°, and the solid saline matter as 267 in 1000. Specimens of the water taken up by Mr. Poole have been deposited at the Geological Society, together with examples of the water in which the fish were found, and of the salt spring which fed the marsh.

With respect to the *Cyprinodonts*, several of the species inhabit salt and fresh waters indifferently, the *C. Hammonis* being one of the number. It was originally discovered by Ehrenberg in the springs of the Oasis of Jupiter Ammon, and subsequently in great plenty in other districts of Egypt and Syria. M. Eloy found it in the waters of Damascus, and Rüppell states that it is an inhabitant of all parts of the Red Sea, and also of the fresh-water springs at Tor, which have a temperature of 26½° of Reaumur or 91°·6 of Fahr. This is also the temperature of one of the hot springs of Cannea in Ceylon, inhabited by the *Ambassis thermalis*. M. Renaud, on sending examples of this *Ambassis* to Cuvier, stated that the heat of the spring was 115° Fahr.; but there is reason to infer, either that his thermometer was incorrect, or that he took the temperature of the feeding spring only.

When Dr. Davy visited the springs in October 1817, the hottest well raised the thermometer to 107°, but he was told that the heat fluctuated, and had been observed as high as 110° F. There are in all seven wells, their temperatures being various, and that of one of them as low as 86°. In one only, in which the thermometer stood at 91°, did he observe fish. He thought it probable that all the wells were supplied with water from the same source (Davy's Travels in Ceylon, p. 44).

In an excursion from the south side of the Sea of Marmora to the Asiatic Olympus, Mr. Poole obtained several Cyprinoids and some Gobies chiefly from Lake Apollonia or Apollonitis near Broussa, and from the River Gemlek that falls into the Sinus Cianus. He also caught some Trout on the summit of Olympus itself. The specimens are unfortunately so much decayed that their original forms cannot be ascertained with sufficient precision, but they have much resemblance to the common *Salmo fario* of Linnæus, and like it have two longitudinal rows of teeth on the vomer, without a cluster on the front of that bone. The Cyprinoids and Gobies are in good condition.

CYPRINUS BITHYNICUS, Richardson.

The *Cyprini* resemble one another so closely, that it is matter of extreme difficulty to determine the species when unaided by correctly labelled specimens. One of Mr. Poole's fish, caught in Lake Apollonitis, has the four minute barbels of *Cyprinus carpis*, but differs from that typical form in the great compression of its body, while it does not agree so perfectly with *C. elatus*, *hungaricus*, *Nordmanni*, and other species with deep bodies, described and figured in the 'Histoire des Poissons,' as to be referable with confidence to any of them. In general form, the origin of the barbels, position of the fins, and numbers of their rays, as well as in the outline of the preorbitar and rest of the suborbitar scale bones, it corresponds more closely with *C. flavipinnis* than with any other member of this group noticed in that work; but as *flavipinnis* belongs to the Indian Archipelago, a minute comparison of specimens is necessary to establish their identity. Hence I have designated Mr. Poole's fish by a geographical appellation, and shall proceed to mention the proportions of its various external parts. Its rays are, D. 4|18; A. 3|45, the last one divided to the base; P. 19; V. 9; C. $19\frac{5}{4}$.

Head a very little less than a fourth of the total length, measured to the tips of the caudal lobes, or a third of the length measured to near the end of the scales on the base of that fin. Height of the body greatest at the front of the dorsal, and equal to a third of the length measured to the tips of the central caudal rays, and consequently sensibly exceeding the length of the head. The greatest thickness of the fish is in the temporal region at the upper anterior angle of the operculum, and the length of the transverse diameter at that place is contained two and a half times in the height of the body; but posterior to the head, the thickness nowhere exceeds a third of the height. The body thins off from the lateral line to the acute edge of the back, and the sides below are also flattened in, but the edge of the belly is flat to the width of the transverse insertion of the ventrals, or about equal to the diameter of the eye.

In profile the fish resembles, as we have said, *C. flavipinnis*, as represented by pl. 457 of the 'Histoire des Poissons,' but the scales are probably smaller, there being thirty-seven in our fish on the lateral line, which runs perfectly straight at mid-height throughout. Snout obtuse. Barbels like those of the species just referred to, but more slender and considerably shorter. Eyes close to the profile, about a diameter and a half of the orbit apart transversely, one diameter from the end of the snout, and one and three-quarters anterior to the gill-opening; the diameter being to the length of the head as 1 : 3·75. Length of the dorsal equal to the vertical distance between the upper surface of the ventrals and the summit of the back. The first ray of the fin stands midway between the end of the snout and the base of the caudal; the ventrals being attached immediately beneath the second soft ray. The fourth stiff ray is as usual robust and denticulated posteriorly, while the three shorter, graduated, anterior stiff rays are incumbent on its base. The third anal ray is similar to the fourth dorsal one, and stands directly under the last two branching rays of the dorsal.

Teeth.—The lower pharyngeal bone is on the whole crescentic, but of irregular form. With its fellow it embraces the lower part of the gullet in nearly a half-circle. On its interior edge there is a row of about twelve small, acutely subulate teeth. At its middle there are three larger obtuse teeth, which stand one before the other in an antero-posterior (or dermo-central) direction, and are contiguous or incumbent on each other. The most interior one is obtusely conical, with a minute central cusp: the next, which is slightly the largest of the three, is worn on the exterior side; and the outer one is worn on both sides, but still blunt on the summit: besides these three there are two much smaller and more chisel-shaped ones, abreast of the second of the larger ones, and on its mesial side. There are thus five molar teeth on each lower pharyngeal bone, and a row of acicular or subulate tooth-like rakers on its inner border.

LEUCISCUS APOLLONITIS, Richardson.

The difficulty of grouping and describing the numerous species of this genus is acknowledged by all who have made the attempt. M. Valenciennes has shown that the labours of Agassiz, Bonaparte and other first-rate ichthyologists on the *Leucisci* have been by no means successful, nor has he himself been more fortunate in his endeavours; the small groups of species described in the 'Histoire des Poissons' being far from sufficiently precise to do away with the necessity of reviewing almost the whole genus before any member of it brought from a new locality can be rightly placed. The entire question of geographical distribution rests on the correct recognition of species; and a great advance in ichthyological science will be made, when the Cyprinoids of Asiatic Turkey, Persia, and Affghanistan shall be collected and described, so as to complete the missing links between the European and Indian forms. Enlightened travellers, therefore, like Mr. Poole, who bring home specimens of freshwater fishes from these countries, merit a grateful commendation from a Natural History Society. The specimen that we have now particularly to notice has a strong resemblance to the English Red-eye or Rudd, the Rotengle of the French, and the *Leuciscus erythrophthalmus* of Cuvier, which is the type of the subgenus *Scardinius* of Bonaparte. In this group the mandible ascends obliquely in front of the upper jaw, so that when the mouth is shut it forms the most anterior point of the fish. It happens that Mr. Poole's specimen is exactly of the same size with the figure of the Rudd in Mr. Yarrell's beautiful work, so that an exact comparison can be made between them, and the most striking difference is that the Rudd has a slightly greater height of body. The length of the head, the position of the dorsal fin, the decurvature of the lateral line, and the numbers of rays in the fins, are the same in both. The ventrals, however, are a little further forward in *L. Apollonitis*, so that the tips of the pectorals overlap them a little, and the scales are a trifle smaller, numbering two more on the lateral line. In the Asiatic fish, moreover, the profile from the point of the snout to the dorsal is less arched, being nearly straight; and the number of the pharyngeal teeth being different in the two species, we obtain a precise distinctive mark. Those of *Apollonitis* number five in the inferior or exterior row, all denticulated within and hooked at the point; while the three forming the interior row are very short, and are likewise denticulated on their interior sides. *L. erythrophthalmus* has only four teeth in the inferior row.

As in most *Leucisci* the second dorsal ray is unbranched and tapering, and the first, which is shorter, is applied closely to its base without the intervention of membrane. In this species the second ray is the tallest in the fin, and it is perfectly flexible, without any of that stiffness which is characteristic of Agassiz' genus *Rhodeus*, in which moreover the pharyngeal teeth are chisel-shaped. The first ray of the dorsal stands on the highest point of the back, and exactly midway between the tip of the snout and the extremities of the middle rays of the caudal; while the middle of the dorsal is in the middle of the total length measured to the points of the caudal rays. The insertion of the ventrals again is midway between the point of the snout and the base of the caudal.

Rays:—Br. 3-3; D. 10; A. 13, last ray deeply divided; V. 9; C. $19\frac{5}{6}$; P. 15 or 16.

Body much compressed, thinning off rapidly towards the belly: its greatest thickness is considerably above the middle, and is equal to between a third and a fourth of its utmost height. Lateral line traced along the lower third of the height, parallel to the curve of the ventral edge, and consequently very concave upwards. It is composed of forty-two scales. Under the front of the dorsal, where the body is highest, there are seven rows of scales above the row which forms the lateral line and four below, or twelve in all. The scales are dotted with black on the edges, and traversed by about four radiating lines on the exposed disk and two or three shorter ones on the covered base, all issuing from the same point. Head small, its length being contained four times and a half in the total length of the fish, measured to the tips of the caudal lobes, and being consequently perceptibly less than the height of the fish. Its breadth between the eyes is a very little in excess of the diameter of the eye, and is greater than the thickness of the body. Preorbitar scale bone nearly rectangular, with the corners rounded off, a little longer than high, and traversed by an unbranched muco-duct, which is continuous with the muciferous tube of the other suborbitars: the second of these bones is narrower than the third one.

Mandible ascending and shutting against the front of the upper jaw. Its joint is directly beneath the anterior curve of the orbit. The eye is nearer to the tip of the snout than to the gill-opening, and its diameter rather exceeds a third of the length of the head. First ray of the dorsal standing midway between the tip of the snout and the extremity of the middle caudal ray; while the middle of the fin is equidistant from the tip of the snout and the distal points of the caudal lobes. Tips of the pectorals slightly overlapping the base of the ventrals, which lies midway between the end of the snout and the base of the caudal. The greatest height of body is at the front of the dorsal, and rather exceeds one-fourth of the entire length of the fish.

M. Valenciennes remarks that descriptions, even when aided by good figures, do not suffice to discriminate the nearly resembling species of *Leuciscus*; hence this or any other proposed new species cannot be considered as properly established until it has been compared with authentic specimens of the known forms.

LEUCISCUS CII (Richardson).

This *Leuciscus* was caught by Mr. Poole in the River Gemlek, anciently named Cius, which falls into the Propontis near the promontory of Posidium. Like the preceding one it belongs to the group of species which have the dorsal placed over the space between the ventrals and anal, but in this instance considerably nearer the former. Its pharyngeal teeth are in two rows, viz. five inferior taller ones, and two interior shorter ones, all incurved at the tips, and some of them distinctly denticulated on the inner edge, others only obsoletely so.

Rays:—D. 10; A. 11, the last one deeply divided, and the front one short and incumbent; V. 9; P. 18; C. 19.

In general form this fish resembles the *Leuciscus Baldneri* more nearly than it does any of the other species figured in the 'Histoire des Poissons,' but the head is a little longer, and the snout does not bulge out at the nostrils; the last ray of the dorsal also stands a little before the anus, and the anal does not occupy so much space as in *L. Baldneri*. Of the figures given by Yarrell, it has most likeness to the Graining or *L. Lancastriensis*.

Length of the head contained four times in the length of the fish up to the base of the caudal, or four and a half times in the length when that fin is included. The form of the head is conical. The eye approaches the upper profile, and its diameter measures about a fourth of the length of the head; it is situated a little more than a diameter from the tip of the snout, and nearly two diameters from the extreme edge of the gill-cover. Preorbitar subtriangular, with its corners irregularly rounded off, and its oral border traversed by a muciferous tube having short lateral branches. The remainder of the suborbital chain unites imperceptibly with the silvery integument of the cheek, but is indicated by its muciferous tube skirting the under curve of the orbit. When the head is allowed to dry, however, the second and third suborbitars are perceived to be very narrow, and the fourth one much broader.

The height of the body is about one-fifth of the total length to the tips of the caudal, or, more exactly, a fourth of the length up to the end of the scales on that fin. It is a very little less than the length of the head. The thickness of the fish is greatest at the nape, which is much rounded, and is equal to half the greatest height of the body. The back is more obtuse than the belly. Lateral line decurved, running more than a third of the height from the rim of the belly, and traced on forty-seven scales. There are seven rows above the lateral line at the ventrals, and four below, making with the one contributing to form the line, twelve in all. Of these, two scales are below the upper ventral ray. There are about seventeen short lines on the base of a scale, and twelve or fourteen longer ones on the exposed disk, all radiating from one point. The concentric lines of structure are crowded, but very evident.

APPENDIX.

Museum of Practical Geology,
Jermyn Street,
November 27th, 1856.

MY DEAR SIR RODERICK,

I hasten to give you the results obtained in the examination of waters which were forwarded to me by Mr. Reeks:—

1. Brine spring near Usdum with fish. Temp. 90° F. Spec. grav. 1·035.
2. North End near Jordan. Temp. 83° F. Spec. grav. 1·196.
3. Dead Sea, Usdum, South End. Temp. 83° F. Spec. grav. 1·204.
4. El Lisan (Peninsula), North End. Spec. grav. 1·200.

No. 1 smelt strongly of sulphuretted hydrogen, and contained a good deal of suspended matters. No. 2 pretty clear; less sulphuretted hydrogen. Nos. 3 and 4 clear, and no sulphuretted hydrogen.

I remain,
My dear Sir Roderick,
Yours very sincerely,
A. W. HOFMAN.

Sir Roderick Murchison,
&c. &c.

Calculated evaporation from the area of the Dead Sea at temp. 84° F. (58·6 dew-point) 1,500,000,000 gallons, or 6,500,000 tons. Assumed area 320 square miles (H. Poole).

3. DESCRIPTIONS OF NINETEEN NEW SPECIES OF LAND-SHELLS, FROM MR. H. CUMING'S COLLECTION, COLLECTED BY M. GHIESBREGHT AT CHIAPA, MEXICO. BY DR. L. PFEIFFER.

(Mollusca, Pl. XXXVI.)

1. **SIMPULOPSIS CHIAPENSIS**, Pfr. *S. testa depresse globosa, tenuissima, confertim striata, nitida, pellucida, cornea; spira minuta, parum prominula; sutura canaliculata; anfr.* 2½ *convexis, ultimo magno; columella tenui, arcuata; apertura diagonali, lunato-circulari; perist. simplice, recto, margine dextro superne subrecedente.*

Diam. maj. 8½, min. 6½, alt. 4⅓ mill.

2. **HELIX HELICTOMPHALA**, Pfr. *H. testa umbilicata, depressa, solida, oblique costulata, nitidula, pallide lutescenti-cornea; spira vix elevata; anfr.* 5½ *convexiusculis, ultimo antice subdeflexo, supra medium subcarinato, basi inflato, circa umbilicum,* ⅓ *diametri fere æquantem, scalariformem subcompresso, antice constricto et scrobiculato; apertura diagonali, rotundato-lunari, dente linguæformi, sublibero parietis coarctata; perist. albo, angulatim reflexo, margine supero subhorizontali, dextro et basali acute unidentatis.*

Diam. maj. 12, min. 10⅓, alt. 5⅓ mill.

3. **HELIX CHIAPENSIS**, Pfr. *H. testa umbilicata, depressa, solidula, striata, nitida, albido-cornea, ad suturam fusculo-fasciata; spira breviter conoidea; anfr.* 5½ *convexiusculis, ultimo antice deflexo, superne turgido, subtus constricto, basi*

inflato; umbilico parvo, subregulari, pervio; apertura diagonali, magna, sinuato-lunari, dente parvulo, tenui, obliquo, libero parietis subcoarctata; perist. albo, breviter reflexo, marginibus conniventibus, supero subascendente, dextro dente descendente et basali denticulo obsoleto munito.
Diam. maj. 10½, min. 9, alt. 6 mill.

4. Spiraxis euptycta, Pfr. *Sp. testa turrita, solidula, plicis compressis, superne distantibus, deorsum confertioribus sculpta, nitidula, cereo-albida; spira regulariter attenuata, acutiuscula; sutura plicis excurrentibus crenata; anfr.* 9–9½ *convexis, ultimo* ¼ *longitudinis vix æquante, rotundato; lamina columellari leviter torta, subreflexa, non truncata; apertura vix obliqua, oblonga; perist. simplice, margine dextro antrorsum subarcuato.*
Long. 9½, diam. 2¾ mill.

5. Spiraxis dubia, Pfr. *Sp. testa turrito-oblonga, solidula, plicis confertis, validis, obtusis munita, nitidula, corneo-albida, strigis castaneis in medio anfr. ultimi evanescentibus irregulariter picta, subvaricosa; spira elongata, apice acuta; anfr.* 9 *convexiusculis, ultimo* ⅓ *longitudinis non attingente; lamina columellari tenui, torta, ad basin apertura subverticali, subrhombeam canalem formante; perist. simplice, marginibus callo tenui junctis, dextro antrorsum leviter arcuato, basi recedente.*
Long. 9½, diam. fere 4½ mill.

6. Spiraxis biconica, Pfr. *Sp. testa subfusiformi, utrinque conico-attenuata, solidula, lævigata, nitida, pallide rubenticornea; spira conica, acutiuscula; sutura marginata; anfr.* 7 *vix convexiusculis, ultimo spiram paulo superante, basi valde attenuato; lamina columellari callosa, torta, non truncata; apertura subverticali, angustissima, acuminato-oblonga; perist. simplice, margine dextro valde antrorsum arcuato.*
Long. 13½, diam. 6 mill.

7. Spiraxis catenata, Pfr. *Sp. testa subfusiformi-oblonga, solidula, nitida, irregulariter striatula, corneo-lutescente, fascia castanea suturali, alteraque maculatim interrupta supra medium anfr. ultimi ornata; spira conica, obtusula; anfr.* 6 *modice convexis, ultimo spira paulo longiore, basi subattenuato; lamina columellari callosa, torta, non truncata; apertura verticali, angusta, acuminata, sinuato-semiovali; perist. simplice, margine dextro superne sinuoso, tum antrorsum arcuato.*
Long. 11, diam. 4 mill.

8. Spiraxis oblonga, Pfr. *Sp. testa oblonga, solidula, lævigata, nitida, cornea; spira elongato-conica, apice obtusa; sutura levi, late marginata; anfr.* 5 *planis, ultimo spiram vix superante, basi minime attenuato; lamina columellari compressa, alte torta, basi non truncata; apertura verticali, an-*

guste ovali, longe acuminata; perist. simplice, margine dextro leviter antrorsum arcuato.
Long. $9\frac{2}{3}$, diam. $4\frac{1}{2}$ mill.

9. Spiraxis parvula, Pfr. *Sp. testa subfusiformi-oblonga, tenui, lineis impressis irregulariter notata, nitida, pellucida, cornea, obsolete rufo-strigata; spira conica, acutiuscula; sutura rufo-marginata; anfr.* 6 *convexiusculis, ultimo* $\frac{4}{7}$ *longitudinis formante, basi attenuato; lamina columellari subincrassata, torta, non truncata; apertura anguste semiovali, longe acuminata; perist. simplice, margine dextro valde antrorsum arcuato.*
Long. 8, diam. vix 4 mill.

10. Achatina Chiapensis, Pfr. *A. testa cylindraceo-turrita, solidula, conferte plicato-striata, nitida, pellucida, cerea; spira gracili, apice obtusula; sutura subcrenulata marginata; anfr.* 9–10 *convexis, ultimo* $\frac{1}{5}$ *longitudinis subæquante, basi rotundato; columella subcallosa, strictiuscula, basi oblique truncata; apertura subverticali, tetragono-ovali; perist. simplice, recto.*
Long. 16, diam. $3\frac{1}{3}$ mill.

11. Achatina trypanodes, Pfr. *A. testa cylindraceo-turrita, solidula, conferte plicata, nitidula, subdiaphana, albido-cerea; spira subregulariter attenuata, obtusula; sutura subcrenulata; anfr.* 12, *superis perconvexis, sequentibus planioribus, ultimo* $\frac{1}{5}$ *longitudinis vix æquante, basi rotundato; columella brevi, leviter arcuata, oblique truncata; apertura subobliqua, elliptico-ovali; perist. simplice, margine dextro leviter antrorsum arcuato.*
Long. 13, diam. 3 mill.

12. Achatina (Oleacina) pulchella, Pfr. *A. testa oblonga, tenuiuscula, sublævigata (sub lente arcuatim et irregulariter striatula), nitida, corneo-albida, obsolete luteo-strigata; spira convexo-conica, acutiuscula; sutura anguste marginata; anfr.* 6 *modice convexis, ultimo* $\frac{2}{3}$ *longitudinis vix æquante, basi subattenuato; columella substricta, anguste truncata; apertura verticali, sinuato-semiovali, longe acuminata; perist. simplice, margine dextro antrorsum vix dilatato.*
Long. $10\frac{1}{2}$, diam. $3\frac{3}{4}$ mill.

13. Achatina (Oleacina) Ghiesbreghti, Pfr. *A. testa fusiformi, tenera longitudinaliter conferte plicata, striis tenuissimis undique decussata, sub epidermide pallide fulva albida; spira concaviusculo-conica, apice obtusa; sutura crenulato-filomarginata; anfr.* 7 *convexiusculis, ultimo spiram paulo superante, superne turgido, basi valde attenuato; columella ad basin aperturæ transverse truncata, prope basin plica obliqua*

munita; apertura angusta, acuminato-semiovali; perist. simplice, rufulo-limbato.
Long. 52, diam. 19 mill.

14. **Cylindrella Ghiesbreghti**, Pfr. (Pl. XXXVI. f. 1.) *C. testa arcuato-rimata, cylindraceo-turrita, truncata, solida, nigro-fusca; spira sensim attenuata, torte truncata; anfr. superst.* 10–11 *vix convexiusculis, superis conferte striatis, inferioribus leviter flexuose plicatis, ultimo antice soluto, striato, dorso angulato, infra medium obtuse carinato; apertura obliqua, subangulato-ovali, basi subeffusa, intus plica valida, compressa columellæ coarctata; perist. continuo, flexuoso, albido, undique breviter reflexo.*
Long. 82, diam. 22 mill.

β. *Testa tenui, cinnamomea, anfr. superst.* 13–16.

15. **Cylindrella turris**, Pfr. (Pl. XXXVI. f. 2.) *C. testa profunde subangulato-rimata, cylindraceo-turrita, truncata, tenui, confertissme subarcuato-striata, diaphana, oleoso-micante, rufa vel fulvida; spira sursum valde attenuata, magis minusve truncata; anfr. superst.* 18–24 *subplanulatis, ultimo antice soluto, dorso et basi carinato, medio angulato; apertura parum obliqua, rhombeo-ovali, plica levi columellæ basi canaliculata; perist. continuo, albo, undique expanso et reflexiusculo.*
Long. 68–72, diam. 14 mill.

16. **Cylindrella clava**, Pfr. (Pl. XXXVI. f. 3.) *C. testa profunde arcuato-rimata, turrito-cylindracea, truncata, tenuiuscula, confertim arcuato-striata, diaphana, parum nitida, fulva; spira sursum parum attenuata, latiuscule truncata; anfr. superst.* 16–21 *modice convexis, ultimo breviter soluto, dorso et basi carinato, latere filocarinato; apertura rhombeo-ovali, plica levi profunda columellæ coarctata, basi canaliculata; perist. continuo, albo, undique expanso et reflexiusculo.*
Long. 42–57, diam. 9–10 mill.

17. **Helicina Chiapensis**, Pfr. *H. testa globoso-turbinata, tenui, striatula et sub lente magis minusve distincte malleata, rubello-cornea, obsolete saturatius fasciata; spira turbinata, acuta; anfr.* 6 *convexiusculis, ultimo spiram æquante, peripheria obsoletissime subangulato; columella brevi, antrorsum in denticulum desinente, superne callum crassiusculum, circumscriptum emittente; apertura obliqua, acuminato-subovali; perist. albo, late expanso, ad insertiones angustato.—Operc. tenue, nigro-purpurascens, nucleo pallido.*
Diam. maj. 12, min. 10, alt. 9 mill.

18. **Helicina brevilabris**, Pfr. *H. testa globoso-turbinata, solidula, striatula, striis spiralibus confertis sub lente decussata, parum nitida, fulvida vel lutescente, interdum fascia* 1 *rubra cincta; spira convexo-conica, acuta; anfr.* 5 *vix con-*

vexiusculis, ultimo rotundato, spira breviore; columella leviter arcuata, basi subsimplice, callum emittente tenuem, diffusum; apertura obliqua, fere semicirculari; perist. undique brevissime expanso.

Diam. maj. 7, min. 6, alt. 5 mill.

19. **Helicina Ghiesbreghti**, Pfr. *H. testa conoidea, solidula, acute carinata, striis incrementi et antrorsum descendentibus sub lente decussatula, sulcisque spiralibus remotis sculpta, pallide lutea, ad suturam et carinam albo-fasciata; spira convexo-conoidea, submucronata; anfr.* 5½ *vix convexiusculis, ultimo utrinque convexiore; columella brevi, superne impressa, basi tuberculata, callum emittente nitidum, diffusum; apertura perobliqua, fere triangulari; perist. calloso, late expanso et reflexiusculo, ad carinam subrostrato.—Operc. solidulum, nigro-castaneum.*

Diam. maj. 19½, min. 16, alt. 10 mill.

4. Descriptions of Eighteen New Species of Land-Shells collected on the Admiralty Islands, from the Collection of Mr. H. Cuming. By Dr. L. Pfeiffer.

(Mollusca, Pl. XXXVI.)

1. **Helix meta**, Pfr. (Pl. XXXVI. f. 4, 5.) *H. testa subobtecte perforata, coniformi, tenuiuscula, vix striatula, nitida, coloribus varia; spira turbinata, acutiuscula; anfr.* 6–6½ *convexiusculis, ultimo infra medium obtuse subangulato, basi modice convexo; apertura diagonali, rhombeo-ovali; perist. reflexiusculo, margine dextro subflexuoso, basali reflexo, cum columellari subverticali, triangulatim supra perforationem reflexo, angulum indistinctum formante.*

Diam. maj. 23, min. 20, alt. 26 mill.

α. *Unicolor vitrina, perist. albo.*
β. *Citrina, fascia suturali et vitta purpurascenti-nigra pone peristoma nigro-violaceum ornata.*
γ. *Nigra, fascia* 1 *suturali pallida ornata, perist. nigro.*

2. **Helix plagiostoma**, Pfr. *H. testa oblique umbilicata, trochiformi, tenuiuscula, leviter striata, nitida, fulva; spira conica, acutiuscula; sutura submarginata; anfr.* 6 *convexiusculis, ultimo antice vix descendente, carinato, basi planiusculo; apertura perobliqua, subrhombea; perist. simplice, marginibus convergentibus, dextro late expanso, antrorsum arcuato, basali reflexo, cum columellari triangulatim dilatato, libero, umbilicum non claudente angulum obtusum formante.*

Diam. maj. 23½, min. 19, alt. 21 mill.

3. **Helix majuscula**, Pfr. *H. testa umbilicata, depressa, suborbiculata, solidula, oblique striata et irregulariter malleata,*

nitida, purpurascenti-fusca; spira vix elevata, medio plana; anfr. 5½ *parum convexis, lente accrescentibus, ultimo antice vix descendente, peripheria obtuse angulato, basi circa umbilicum infundibuliformem, magnum subcompresso; apertura diagonali, lunari, intus margaritacea; perist. calloso, albido, reflexiusculo, marginibus callo tenui junctis, basali perarcuato.*
Diam. maj. 44, min. 39, alt. 16 mill.

4. **Helix quercina**, Pfr. *H. testa umbilicata, globoso-conoidea, solida, oblique striata et impresso-punctata, rufo-castanea; spira conoidea, acutiuscula; anfr.* 5 *modice convexis, ultimo rotundato, antice vix descendente, juxta umbilicum angustum leviter canaliculato; apertura fere diagonali, rotundato-lunari, intus cærulescenti-albida; perist. calloso, albo, brevissime reflexo, margine columellari triangulatim dilatato, libero.*
Diam. maj. 36, min. 31, alt. 23 mill.

5. **Helix Hombroni**, Pfr. *H. testa angustissime umbilicata, conoideo-subglobosa, tenuiuscula, oblique striata et pilis brevibus rigidis obsita, saturate castanea; spira breviter conoidea, acutiuscula; anfr.* 5½ *convexiusculis, lente accrescentibus, ultimo vix descendente, peripheria subangulato, basi inflato; apertura fere verticali, subauriformi-lunari, intus albida; perist. albo, marginibus remotis, supero brevi, subhorizontali, expanso, basali subflexuoso, breviter reflexo, ad umbilicum dilatato.*
Diam. maj. 34, min. 29, alt. 18 mill.

This is probably the *H. Fanellei*, Hombr. & Jacq., figured in the Voy. au Pôle Sud, Atl. pl. 4. f. 15–18, but the name has been preoccupied by Le Guillon, 1842.

6. **Helix Lombei**, Pfr. (Pl. XXXVI. f. 6, 7.) *H. testa imperforata, depresso-turbinata, tenuiuscula, striatula et striis levissimis antrorsum descendentibus decussatula, albida, fasciis* 2 *latis fulvo-fuscis, maculisque variis nigricantibus notata; spira conoidea, acutiuscula; anfr.* 5 *convexis, ultimo depresso-rotundato, antice descendente, peripheria subangulato (angulo antice evanescente); columella intrante, declivi, lata, excavata, alba; apertura perobliqua, lunato-ovali; perist. albo, marginibus conniventibus, dextro late expanso, basali lato, plano.*
Diam. maj. 31, min. 24, alt. 17 mill.

β. *Lutescens, nigro late bifasciata.*
γ. *Albida, strigis obliquis diaphano-griseis picta.*

7. **Helix flexilabris**, Pfr. *H. testa imperforata, turbinata, solidula, striolis obliquis et levissimis antrorsum descendentibus subgranulata, fulvido-albida, fasciis nigro-castaneis latis vel angustis ornata; spira turbinata, obtusula; anfr.* 5½ *convexiusculis, ultimo antice descendente, peripheria obsoletissime subangulato; columella intrante, compressa, subarcuato-declivi; apertura perobliqua, lunato-elliptica; perist. late expanso,*

marginibus conniventibus, dextro flexuoso, reflexiusculo, columellari sursum adnato.

Diam. maj. 27, min. 21½, alt. 23 mill.

Nearly allied to *H. coniformis*, Fér., from which it differs by its whorls being less convex, the aperture elliptically produced, and the peristome.

8. HELIX PHTHISICA, Pfr. *H. testa imperforata, trochiformi, solidula, striatula et rugis distinctis subdistantibus, antrorsum descendentibus sculpta, opaca, sordide alba; spira regulariter conica, acutiuscula; anfr.* 5 *planiusculis, ultimo vix descendente, paulo convexiore, subangulato, basi virenti-fulvo, radiato-striato, sulcis nonnullis spiralibus notato, nitido; columella declivi, compressa, strictiuscula, lata, subexcavata; apertura perobliqua, truncato-elliptica; perist. subincrassato, marginibus vix convergentibus, dextro breviter reflexo, antrorsum arcuato, basali lato, patente.*

Diam. maj. 23, min. 18, alt. 20 mill.

This shell differs from *H. vexillaris*, Pfr., by its solid structure, the spire being highly conical, the distant folds, the peristome, &c.

9. HELIX XIPHIAS, Pfr. *H. testa umbilicata, depressissima, tenuiuscula, oblique striata, albido-cornea, fasciis* 4 *angustis castaneis, medianis* 2 *carinæ acutæ, albæ contiguis, ornata; spira vix elevata vel subimmersa; sutura carina marginata; anfr.* 5 *convexiusculis, lente accrescentibus, ultimo non descendente; umbilico* ¼ *diametri æquante; apertura perobliqua, angulato-lunari; perist. simplice, recto, marginibus subconvergentibus, dextro antrorsum arcuato, columellari subincrassato, basi nodulum callosum gerente.*

Diam. maj. 18, min. 15½, alt. 4½–5 mill.

β. Paulo minor, fusca, fasciis obsoletis.

To be compared with *H. entomostoma*, Jacq. Voy. Pôle Sud, Atl. pl. 7. f. 22–25.

10. HELIX SEBACEA, Pfr. *H. testa umbilicata, conoideo-semiglobosa, solidula, substriata, parum nitida, sebacea; spira convexo-conoidea, obtusa; sutura submarginata; anfr.* 6 *convexiusculis, lente accrescentibus, ultimo non descendente, obsolete angulato; umbilico aperto,* $\frac{1}{7}$ *diametri vix æquante; apertura perobliqua, lunato-ovali; perist. subsimplice, marginibus convergentibus, dextro recto, antrorsum arcuato, basali subincrassato, ad umbilicum vix dilatato.*

Diam. maj. 17½, min. 15, alt. 10 mill.

11. H. EUSTOMA, Pfr. *H. testa umbilicata, depressa, striatula et quincuncialiter punctata* (*pilosa*?), *aurantiaco-fusca; spira plana; anfr.* 4½ *convexis, ultimo alto, inflato, antice sensim descendente et rufescente, basi circa umbilicum infundibuli-*

formem subangulato; apertura obliqua, elegantissime rotundato-lunari; perist. subincrassato, undique breviter reflexo, fusco-carneo, marginibus conniventibus, callo junctis, columellari vix dilatato.
Diam. maj. 21, min. 17½, alt. 11 mill.

12. Helix ursina, Pfr. *H. testa umbilicata, depressa, tenuiuscula, striatula et sublente punctulata, vix nitidula, saturate brunnea; spira brevissime conoidea, vertice subtili; anfr.* 5½ *modice convexis, ultimo majore, inflato, non descendente, circa umbilicum angustum, pervium subcompresso; apertura diagonali, lunato-ovali, intus lilaceo-margaritacea; perist. tenui, marginibus distantibus, dextro arcuato, breviter expanso, columellari declivi, reflexiusculo, ad umbilicum dilatato.*
Diam. maj. 20, min. 17, alt. 10½ mill.

13. Helix murina, Pfr. *H. testa umbilicata, depresse turbinato-globosa, tenui, ruguloso-striata, granulato-subasperata, saturate rufa; spira breviter conoidea, obtusula; anfr. fere* 5 *convexis, ultimo inflato, antice vix descendente, circa umbilicum mediocrem, pervium subcompresso; apertura diagonali, lunato-rotundata, intus submargaritacea; perist. fusco-carneo, undique breviter expanso, marginibus subconvergentibus, columellari superne dilatato, fornicatim reflexo.*
Diam. maj. 15, min. 12, alt. 9 mill.

14. Partula strigosa, Pfr. *P. testa perforata, oblongo-conica, solidula, obsoletissime decussatula, subopaca, albida, strigis irregularibus fulvis vel rufis ornata; spira conica, apice acuta; anfr.* 5 *subplanis, ultimo spira vix breviore, basi subattenuato, rotundato; columella superne subtorta, basi subnodosa; apertura vix obliqua, truncato-ovali, interdum callo nodiformi parietis coarctata; perist. albo, calloso, undique subæqualiter patente.*
Long. 17–18, diam. 9 mill.

15. Partula minuta, Pfr. *P. testa perforata, globoso-conica, tenui, striatula striisque spiralibus subgranulata, pallide fulvescente, diaphana; spira brevi, conica, obtusula; anfr.* 4 *convexis, ultimo globoso,* $\frac{3}{5}$ *longitudinis formante; columella subsimplice, leviter recedente; apertura parum obliqua, ovali; perist. tenui, albo, marginibus approximatis, dextro superne perarcuato, expanso, columellari latiore, patente.*
Long. 10½, diam. 7 mill.

16. Cyclostoma (Leptopoma) Hanleyanum, Pfr. *C. testa vix perforata, globoso-turbinata, tenuiuscula, striis spiralibus confertissimis subundulatis, lirisque nonnullis levibus obtusis cincta, fulvida, flammis angulosis fuscis marmorata; spira turbinata, apice acutiusculo, nigricante; anfr.* 5 *convexis, ultimo inflato, circa perforationem subclausam pallide; aper-*

tura obliqua, subangulato-circulari; perist. subduplice interno vix interrupto, adnato, externo patente, concentrice striatulo, latere sinistro dilatato, fornicatim reflexo.—Operc. planum, fulvum.

Diam. maj. 12, min. 10, alt. 10 mill.

17. **Helicina gratiosa**, Pfr. *H. testa subgloboso-turbinata, tenuiuscula, striatula, striolis spiralibus obsoletissime notata, nitida, pellucida, fuscescenti-rubra vel lutea; spira conoidea, acutiuscula; anfr.* 5 *convexiusculis, ultimo subcarinato, antice rotundato; columella subrecedente, alba, callum emittente albidum; apertura obliqua, subtriangulato-semicirculari; perist. undique breviter expanso.—Operc. tenue, solidum, carneum.*

Diam. maj. 9, min. 7½, alt. fere 6 mill.

18. **Helicina suavis**, Pfr. *H. testa turbinata, tenui, nitidissima, superne striatula striisque spiralibus conferte notata, rubella, albido-marmorata, vel lutea aut carnea, pallide rubro variegata; spira conoidea, acuta; anfr. fere* 5 *convexiusculis, ultimo compresse et acute carinato, basi convexiore; columella brevi, basi subdentata, callum emittente crassiusculum diffusum; apertura obliqua, subtriangulari; perist. albo, margine supero breviter expanso, basali reflexiusculo.—Operc.?*

Diam. maj. 10½, min. 8¾, alt. 6⅔ mill.

Besides the described new species, there were in the same collection from the Admiralty Islands, *Helix Novæ Hiberniæ*, Quoy, *fringilla*, Pfr. (beautiful and large varieties), *migratoria*, Pfr., *Sachalensis*, Pfr., *motacilla*, Pfr., *Cleryi*, Recl., *helicinoides*, Jacq., *pyxis*, Hinds, *Grimardi*, Desh., *brevipila*, Pfr., *Pfeifferi*, Phil., &c.

5. DESCRIPTIONS OF THIRTY-THREE NEW SPECIES OF LAND-SHELLS, FROM THE COLLECTION OF H. CUMING, ESQ.

BY DR. L. PFEIFFER.

(Mollusca, Pl. XXXVI.)

1. **Helix gloriosa**, Pfr. *H. testa imperforata, depresse ovata, crassa, ponderosa, oblique conferte plicato-striata lirisque crebris obtusis subregularibus cincta, fulvida, strigis singulis pallidis et saturatioribus notata; spira convexa, obtusa, nuda, sub lente granulata, apice subtilissimo; anfr.* 3½ *rapide accrescentibus, ultimo perinflato; apertura diagonali, lunato-ovali, intus rubella; perist. crassissimo, breviter expanso, marginibus callo crasso junctis, columellari adnato.*

Diam. maj. 64, min. 50, alt. 39 mill.

Hab. Madagascar.

2. **Helix ductilis**, Pfr. *H. testa umbilicata, discoidea, tenui,*

sub lente confertim striatula, albido-hyalina; spira plana; anfr. fere 5 subplanis, sensim accrescentibus, ultimo non descendente, depresso, peripheria rotundato, basi vix convexiore; umbilico perspectivo, ¼ diametri superante; apertura obliqua, late lunari; perist. simplice, recto, marginibus vix convergentibus, columellari brevi, verticali, cum basali subangulatim juncto.

Diam. maj. 6½, min. 5½, alt. 2 mill.
Hab. Drayton Range, North Australia (*Mr. Stutchbury*).

3. Helix Stutchburyi, Pfr. *H. testa sub obtecte perforata, turbinato-globosa, tenui, superne sub lente minute granulata, pallide fulva, ad suturam et supra medium rufo-fasciata; spira convexo-conoidea, obtusula; anfr. 5 convexiusculis, ultimo rotundato, antice vix descendente, basi lævigato; apertura diagonali, rotundato-lunari; perist. tenui, marginibus subconvergentibus, dextro vix expansiusculo, basali breviter reflexo, columellari fornicatim dilatato, umbilicum angustissimum fere tegente.*

Diam. maj. 15½, min. 13½, alt. 10 mill.
Hab. Drayton Range, North Australia (*Mr. Stutchbury*).

4. Helix delta, Pfr. *H. testa sub obtecte perforata, trochiformi, tenuiuscula, striatula et foveolata, opaca, carneo-albida; spira regulariter conica, apice acuta; anfr. 6 planis, ultimo non descendente, subacute carinato, basi convexiusculo; apertura fere diagonali, angulato-lunari; perist. simplice, margine dextro recto, basali reflexiusculo, columellari supra perforationem dilatato, patente.*

Diam. maj. 8, min. 7½, alt. 6½ mill.
Hab. Drayton Range, North Australia (*Mr. Stutchbury*).

5. Helix pliculosa, Pfr. *H. testa umbilicata, turbinato-globulosa, tenuiuscula, superne confertim plicosa, diaphana, parum nitida, rubello-cornea; spira conoidea, vertice subtili; anfr. 4½ convexiusculis, ultimo supra medium subangulato, antice rotundato, vix descendente, basi inflato, circa umbilicum angustum, pervium subcompresso; apertura obliqua, lunato-rotundata; perist. albido, marginibus subconniventibus, dextro expansiusculo, columellari sursum dilatato, cum basali angulum obtusum formante.*

Diam. maj. 16, min. 13, alt. 10 mill.
Hab. Drayton Range, North Australia (*Mr. Stutchbury*).

6. Helix castrensis, Pfr. *H. testa imperforata, conoideo-semiglobosa, solida, rugoso-plicatula et irregulariter subgranulata, pallide fulvida, strigis fuscis crebris regulariter radiata; spira convexiusculo-conoidea, obtusula; anfr. 4 vix convexiusculis, ultimo medio subacute carinato, antice breviter descendente, inflato, basi pallidiore; apertura perobliqua, subtriangulari-lunari; perist. albo, margine dextro arcuato, breviter reflexo, basali dilatato, adnato, introrsum dentibus 2 obtusis plicæformibus munito.*

Diam. maj. 25, min. 21, alt. 15 mill.
Hab. West Indies.

7. **Helix Lindstedti**, Pfr. *H. testa sinistrorsa, perforata, conoideo-lenticulari, carinata, tenui, diaphana, superne undulato-striata et minutissime granulata, parum nitida, rubello-lutescente; spira regulariter elevata, obtusa; sutura lineari; anfr. 6 planiusculis, sensim accrescentibus, ultimo non descendente, supra medium acute carinato, basi convexo, nitidissimo, non decussato, circa perforationem non apertam albido; apertura fere diagonali, securiformi; perist. simplice, recto, margine columellari in laminam brevem revolutam dilatato.*

Diam. maj. 35½, min. 31, alt. 14 mill.

Hab. Malacca (*Rev. F. W. Lindstedt*).

8. **Helix Bourguignati**, Pfr. *H. testa umbilicata, globoso-depressa, tenui, minutissime malleato-striata, parum nitente, diaphana, carnea; spira breviter conoidea, vertice subtili, luteo; anfr.* 6 *convexiusculis, regulariter accrescentibus, ultimo rotundato, antice vix descendente; umbilico angusto, vix pervio; apertura obliqua, rotundato-lunari; perist. intus albolabiato, marginibus vix convergentibus, dextro recto, basali reflexiusculo, ad umbilicum dilatato, patulo.*

Diam. maj. 19, min. 16, alt. 11 mill.

Hab. Crimea.

9. **Helix Adelaidæ**, Pfr. *H. testa umbilicata, depressa, carinata, tenuiuscula, striata, alba, fascia fuscula supera ornata; spira vix elevata, vertice obtusiusculo, corneo; anfr.* 4 *convexiusculis, ultimo non descendente, supra peripheriam subacute carinato, basi inflato; umbilico perspectivo,* $\frac{1}{4}$ *diametri fere æquante; apertura fere diagonali, lunato-rotundata, ad carinam vix angulata; perist. recto, intus levissime labiato, marginibus conniventibus, columellari subpatulo.*

Diam. maj. 6, min. 5, alt. fere 3 mill.

Hab. Adelaide, Australia.

10. **Helix chionodiscus**, Pfr. *H. testa subobtecte umbilicata, conoideo-lentiformi, carinata, solida, rugoso-striatula, opaca, nivea; spira convexiusculo-conoidea, nucleo læviusculo, obtuso; anfr.* 5 *vix convexiusculis, ultimo antice breviter deflexo, infra suturam linearem turgidulo, peripheria magis minusve acute carinato, basi convexo; apertura diagonali, rhombeo-lunari; perist. subcalloso, marginibus subparallelis, dextro recto, basali perarcuato, reflexo, versus umbilicum sensim dilatato, lamina lata adnata illum fere claudente.*

Diam. maj. 26, min. 23, alt. 13 mill.

Hab. Crimea.

11. **Helix Grevillei**, Pfr. (Pl. XXXVI. fig. 8.) *H. testa imperforata, conica, solida, striatula et plicis validis oblique antrorsum descendentibus, interdum malleato-interruptis munita, castanea, strigis sparsis nigricantibus notata; spira conoidea,*

apice rosea, acutiuscula; anfr. 4½ *convexiusculis, rapide accrescentibus, penultimo subtus albo-calloso, ultimo antice descendente, peripheria obtuse sed distincte angulato; apertura perobliqua, truncato-oblonga, intus pallide cærulescente; perist. nigro, expanso et reflexo, marginibus parallelis, callo nigro junctis, columellari dilatato, plano, adnato, dextrorsum subdentato, ad axin albido.*

Diam. maj. 49–58, min. 36–42, alt. 32–39 mill.

Hab. Ceylon (*Mr. Thwaites*).

12. Ennea insignis, Pfr. *E. testa breviter rimata, ovato-oblonga, tenuissima, oblique confertim striata, striisque spiralibus versus basin evanescentibus decussatula, nitida, pellucida, cereo-hyalina; spira ovoidea, apice obtusa; sutura submarginata; anfr.* 7 *convexiusculis, penultimo supra aperturam subplanato, ultimo* $\frac{3}{7}$ *longitudinis formante, antice arcuatim ascendente, juxta rimam subcompresso; columella recedente, dentato-plicata; perist. tenui, albo, undique expanso, margine columellari dilatato, patente.*

Long. 37, diam. 20 mill.

Hab. Gaboon, Africa (*Mr. Auboy*).

13. Bulimus Palavanensis, Pfr. *B. testa imperforata, oblonga, solida, striatula, epidermide fusco-cinerea, castaneo varie strigata, sursum detrita munita; spira convexiusculo-conica, apice obtusula; anfr.* 5–5½ *modice convexis, ultimo spiram subæquante vel breviore; columella substricta, albida; apertura obliqua, truncato-ovali, intus griseo-cærulescente; perist. calloso, nigricante, breviter reflexo.*

Long. 48–49, diam. 27 mill.

Hab. Palawan (*Dr. Traill*).

14. Bulimus librosus, Pfr. *B. testa imperforata, ovato-oblonga, solida, striatula, epidermide subhydrophana, libro-cinerea, fusco irregulariter strigata et ad suturam ocellata obducta; spira convexiusculo-conica, obtusa; anfr.* 5½ *planiusculis, ultimo spira vix breviore, epidermide decidua circa columellam pallidam, compressam, substrictam saturate castanea, nitida; apertura obliqua, ovali-oblonga, intus cærulescente; perist. castaneo-nigro, subincrassato, revoluto, margine dextro leviter arcuato.*

Long. 40, diam. 21 mill.

Hab. Palawan (*Dr. Traill*).

15. Bulimus Lindstedti, Pfr. *B. testa sinistrorsa, imperforata, ovato-conica, solida, striatula, nitida, candida; spira elongato-conica, apice obtusula; anfr.* 6½ *convexiusculis, ultimo* $\frac{3}{7}$ *longitudinis subæquante, obsolete angulato, antice rotundato; columella subverticali, vix torta; apertura fere diagonali, subsemicirculari; perist. leviter incrassato, expanso, marginibus callo concolore junctis.*

Long. 39, diam. 17 mill.

Hab. Malacca (*Rev. F. W. Lindstedt*).

16. **Bulimus parallelus**, Pfr. *B. testa compresse umbilicata, fusiformi, tenuiuscula, striatula, fulva, epidermide albida subreticulata; spira elongato-conica, obtusa; anfr. 7 modice convexis, ultimo spira paulo breviore, basi compresso; columella superne leviter torto-plicata; apertura verticali, oblonga, lateribus parallelis, basi effusa, utrinque fusco-strigata; perist. tenui, albo, expanso, margine dextro supra medium impresso, columellari latiore, sulco arcuato ab anfractu contiguo separato.*
Long. 22, diam. 7 mill.
Hab. St. Catherine's, Brazil.

17. **Bulimus Catharinæ**, Pfr. *B. testa breviter rimata, subperforata, fusiformi, solidula, undique leviter punctato-rugulosa, albida, punctis corneis substrigatim conspersa; spira ventroso-turrita, apice acutiuscula; anfr.* $8\frac{1}{2}$ *convexiusculis, ultimo* $\frac{1}{3}$ *longitudinis vix attingente, basi crista valida, compressa et pone illam minore munito, antice interne et externe interrupte nigro-strigato; apertura obliqua, subseptemdentata; plica 1 lamellæformi in pariete, secunda subquadrangulari ad columellam, tertia obliqua in latere sinistro baseos effusæ, 3 subæqualibus et 1 minuta in margine dextro; perist. albo, undique modice expanso.*
Long. 23–25, diam. $7\frac{1}{2}$–8 mill.
Hab. St. Catherine's, Brazil.

18. **Bulimus sugillatus**, Pfr. *B. testa anguste umbilicata, oblongo-turrita, tenui, irregulariter plicato-striata, cornea, strigis subpunctatis opacis albis, singulisque rufis notata; spira elongato-conica, acuta; sutura levissime crenulata; anfr. 9 convexis, ultimo* $\frac{2}{5}$ *longitudinis subæquante, basi subcompresso; columella leviter et stricte recedente; apertura parum obliqua, oblonga; perist. simplice, margine dextro recto, columellari sursum dilatato, fornicatim reflexo.*
Long. 24, diam. $9\frac{1}{2}$ mill.
Hab. Bolivia.

19. **Bulimus Gayi**, Pfr. *B. testa subobtecte umbilicata, conico-ovata, solidula, fusca, fasciis angustis albis varie ornata; spira conica, obtusa; anfr. 5 modice convexis, ultimo spiram paulo superante, basi rotundato; columella leviter arcuata; apertura parum obliqua, truncato-ovali, intus albida; perist. simplice, margine dextro recto, columellari perdilatato, umbilicum angustum fere tegente.*
Long. 27, diam. 16 mill.
Hab. Bolivia.

20. **Bulimus Sabatieri**, Pfr. *B. testa subperforata, ovato-oblonga, tenuiuscula, sublævigata, irregulariter striatula, strigis undulatis pallide lutescentibus et saturate brunneis alternantibus picta; spira conica, sursum pallidiore, apice obtuso; anfr. 6 parum convexis, ultimo spira paulo breviore, infra medium obsolete angulato; columella stricta, violaceo-fusca; apertura parum*

obliqua, anguste elliptica; perist. simplice, recto, margine columellari sursum dilatato, reflexo, subadnato.

Long. 22, diam. 12 mill; ap. 11 mill. longa, 5½ lata.

Hab. Banks of the "Fleuve blanc," China? (*Mr. Sabatier*).

21. **Bulimus Dutaillyi**, Pfr. *B. testa subperforata, oblongo-turrita, tenui, confertim plicatula, nitida, albida, fasciis* 6–7 *interruptis spadiceis ornata; spira elongata, apice acuta; anfr.* 7 *convexiusculis, ultimo* $\frac{2}{5}$ *longitudinis subæquante, basi attenuato; columella vix arcuata, subrecedente; apertura vix obliqua, elliptico-oblonga; perist. simplice, recto, margine columellari papyraceo, superne reflexo, subadnato.*

Long. 31, diam. 12 mill.; ap. 13½ mill. longa, 6½ lata.

Hab. Brazils (*Mr. Dutailly*).

22. **Bulimus pliculatus**, Pfr. *B. testa umbilicata, ovato-conica, tenuiuscula, plicis levibus, subvariciformibus sculpta, haud nitente, pallide grisea, strigis angustissimis albis et fuscis irregulariter picta; spira conica, acuta; anfr.* 7 *convexiusculis, ultimo spira paulo breviore, basi circa umbilicum mediocrem, rotundum subcompresso; columella substricta; apertura vix obliqua, elliptico-oblonga; perist. simplice, recto, margine columellari a basi dilatato, subfornicatim reflexo.*

Long. 23, diam. 11⅓ mill.

Hab. Bolivia.

23. **Bulimus Clouéi**, Pfr. *B. testa perforata, ovato-turrita, solidula, striata et interdum submalleata, alba, strigis, maculis et punctis corneo-fuscis irregulariter notata; spira elongato-conica, acutiuscula; anfr.* 7 *modice convexis, ultimo* $\frac{3}{7}$ *longitudinis vix æquante, subangulato, circa perforationem non perviam corneo-areolato; columella breviter recedente; apertura obliqua, sinuato-ovali, intus fuscula; perist. breviter expanso, margine columellari superne dilatato, reflexo, tum angulo obtuso ad basin descendente.*

Long. 22, diam. 10 mill.

Hab. Brazil (*Mr. Cloué*).

24. **Bulimus puncticulatus**, Pfr. *B. testa profunde et compresse umbilicata, ovato-conica, tenuiuscula, sublævigata, nitida, albida, punctis pellucidis raris conspersa; spira elongato-conica, acutiuscula; anfr.* 7 *planiusculis, summis lutescentibus, ultimo spira breviore, antice ascendente, basi levissime compresso; columella subrecedente, leviter arcuata; apertura subverticali, oblongo-ovali; perist. simplice, margine dextro breviter expanso, columellari perdilatato, subflexuoso, patente.*

Long. 29, diam. 12½ mill.

Hab. Bolivia.

25. **Partula alabastrina**, Pfr. *P. testa compresse umbilicata, oblongo-conica, tenui, levissime striatula, vix nitidula, lutescenti-alabastrina; spira conica, obtusula; anfr.* 5½ *convexis, ultimo*

spiram vix superante, basi attenuato, subcompresso; apertura parum obliqua, oblique truncato-oblonga; columella substricte recedente; perist. albo, marginibus callo tenuissimo junctis, dextro late expanso, columellari latissimo, patente.
Long. 23, diam. 11 mill.
Hab. Salomon's Islands.

26. CYCLOSTOMA (CYCLOTUS) LINDSTEDTI, Pfr. *C. testa umbilicata, depressa, subdiscoidea, distincte striata, strigis fulgurantibus nigro-fuscis et luteis, superne latis, subtus linearibus picta; spira vix elevata; anfr.* 4 *convexis, celeriter accrescentibus, ultimo terete, vix descendente; umbilico lato,* $\frac{1}{3}$ *diametri superante; apertura obliqua, subcirculari; perist. breviter adnato, duplicato; interno expansiusculo, externo albo, undique subæqualiter patente.—Operc.* Cycloti.
Diam. maj. 11, min. 9, alt. 4 mill.
Hab. Mount Ophir, Malacca (*Rev. F. W. Lindstedt*).

27. CATAULUS HÆMASTOMUS, Pfr. *C. testa breviter et profunde rimata, ovali-pyramidali, tenuiuscula, conferte striatula, parum nitente, diaphana, citrina; spira convexiusculo-turrita, apice subacuta; sutura submarginata; anfr.* 8 *convexis, ultimo vix attenuato, basi axin excedente; carina umbilicali valida, compressa, antrorsum vix dilatata; periomphalo lato, costulato-striato; apertura subcirculari; perist. fusco-sanguineo, simplice, ad anfractum contiguum angustato, lateribus rectangule late patente et revoluto, basi subproducto, canali mediocri perforato.*
Long. 27–28, diam. 11–12 mill.
Hab. Ceylon (*Mr. Thwaites*).

28. HELICINA (ALCADIA) RHAMPHOSTYLA, Pfr. *H. testa conoideo-globosa, solida, sublævigata, albida vel lutescente; spira breviter conoidea, obtusula; anfr.* 4½, *superis vix convexiusculis, ultimo magno, rotundato; columella lata, superne in callum crassum, semicircularem dilatata, basi dextrorsum curvata; apertura obliqua, subsemicirculari; perist. expanso, tenui, intus calloso, margine dextro subrepando, basali sinu profundo ab extremitate rostriformi columellæ disjuncto, præterea plica pone columellam intrante munito.—Operc. ?*
Diam. maj. 15½, min. 13, alt. 12 mill.
Hab. ——?

29. HELICINA NORFOLKENSIS, Pfr. *H. testa depresso-turbinata, solidula, leviter striata, albida; spira conoidea, versus apicem minute papillarem lutescente; anfr.* 5 *vix convexiusculis, ultimo antice rugoso, peripheria subangulato, basi planiusculo, callo granuloso nitido circumscripto et epidermide fulva decidua obducto; columella brevi, arcuata; apertura fere diagonali, subtriangulari-lunari; perist. simplice, recto, margine basali subincrassato.—Operc. testaceum, pallidum.*
Diam. maj. 14, min. 12, alt. 8 mill.
Hab. Norfolk Islands.

30. Helicina pictella, Pfr. *H. testa conoideo-depressa, tenui, sub lente tenuiter et subconferte lirata, parum nitida, diaphana, pallide cornea, ad suturam rubro-maculata; spira breviter conoidea; anfr. 4 convexiusculis, ultimo subangulato, basi callo tenui subcircumscripto obducto; columella brevissima, simplice, tenui; apertura parum obliqua, semiovali; perist. simplice, recto, margine basali angulum rectum cum columella formante.—Operc.?*

Diam. maj. 4, min. $3\frac{1}{3}$, alt. 2 mill.

Hab. Norfolk Islands.

31. Helicina Draytonensis, Pfr. *H. testa conoidea, solidula, ruguloso-striata striisque spiralibus nonnullis notata, parum nitida, carnea; spira conoidea, apice mucronulata, lutea; anfr. $4\frac{1}{2}$ planiusculis, ultimo subcarinato, basi convexiore, callo tenui, subdiffuso obducto; apertura diagonali, triangulari-semiovali; perist. albo, breviter expanso, margine basali leviter arcuato, angulatim cum columella brevi, simplice juncto.—Operc.?*

Diam. maj. $5\frac{1}{2}$, min. $4\frac{1}{2}$, alt. $3\frac{1}{2}$ mill.

Hab. Drayton Range, North Australia.

32. Helicina Heatei, Pfr. *H. testa subdepressa, tenuiuscula, striatula et subgranulata, parum nitida, fasciis latis saturate purpureis et albis picta; spira brevissime conoidea, mucronulata; anfr. 5 vix convexiusculis, ultimo lato, peripheria subcarinato, basi circa callum fulvo-aurantiacum, circumscriptum albo; apertura perobliqua, triangulari-semiovali; columella brevi, perarcuata; perist. reflexo, læte aurantiaco, margine basali levissime arcuato, immediate in callum basalem continuato.—Operc.?*

Diam. maj. 14, min. $11\frac{1}{3}$, alt. $7\frac{1}{2}$ mill.

β. *Lutea, spira et fascia unica anfr. ultimi supera purpureis, callo basali et peristomate igneis.*

Hab. Island of Granada, West Indies (named after *R. W. Heate, Esq.*, Lieut.-Governor of the Island).

33. Helicina rufa, Pfr. *H. testa subconoideo-depressa, solidula, subrugoso-striata et punctulata, nitida, rufa; spira subconoideo-convexa, vertice subtili; anfr. $4\frac{1}{2}$, superis planiusculis, ultimo lato, depresso, peripheria subrotundato; apertura diagonali, late semiovali; columella verticaliter ab anfr. penultimo descendente, leviter curvata, antice in tuberculum desinente, callum basalem emittente subgranulatum, circumscriptum; perist. breviter expanso, albo-limbato.—Operc. concolor.*

Diam. maj. 13, min. 11, alt. $6\frac{2}{3}$ mill.

β. *Pallide straminea, perist. intus pallide aurantiaco.*

γ. *Minor, rufa.*

Diam. maj. 10, min. $8\frac{2}{3}$, alt. $5\frac{1}{2}$ mill.

Hab. Haiti (*Mr. Sallé*).

6. DESCRIPTIONS OF TWO NEW SPECIES OF MELAMPUS, FROM MR. CUMING'S COLLECTION. BY DR. L. PFEIFFER.

1. MELAMPUS OBLONGUS, Pfr. *M. testa subrimata, oblonga, solida, lævigata, fulvido-carnea, albido obsolete fasciata et strigata, strigisque variciformibus irregularibus fusculis notata; spira convexo-conoidea, apice mucronulata, plerumque fusca; sutura lineari, lacera; anfr.* 8–9 *vix convexiusculis, ultimo* $\frac{3}{5}$ *longitudinis formante, prope suturam subangustato, basi saccato; apertura verticali, angusta, callo profundo nodiformi parietali et plica columellari obliqua, compressa coarctata; perist. fusco-limbato, margine dextro acuto, intus callo albo, subplicifero munito, columellari incrassato, adnato.*

Long. 11½, diam. 6 mill.

β. *Paulo minor, gracilior, castaneus, albo-trifasciatus.*

Hab. Island of Bermuda.

Habitu similis *M. cingulato*, sed evidenter affinior *M. angiostomo*, Desh., a quo differt statura, numero anfractuum et callo marginis dextri non denticulato.

2. MELAMPUS (OPHICARDELUS) STUTCHBURYI, Pfr. *M. testa subumbilicata, fusiformi-ovata, solidula, striatula, superne liris obtuse elevatis circumdata, opaca, nigro-fusca, albo trifasciata; spira convexo-conica, apice acuta, interdum suberosa; sutura lineari, deorsum sublacera; anfr.* 7 *planis, ultimo fere* $\frac{3}{5}$ *longitudinis formante, infra medium obsolete spiraliter striato, basi parum attenuato; apertura subverticali, semiovali; plica parietali* 1 *compressa, alba, intrante, extus in carinam subacutam, periomphalum infundibuliformem cingentem producta; plica columellari compressa, oblique vix ascendente; perist. acuto, margine dextro inermi, superne repando, columellari fornicatim reflexo, libero, umbilicum simulante.*

Long. 16, diam. 8 mill.

Port Curtis, Australia (*Mr. Stutchbury*).

7. CATALOGUE OF A COLLECTION OF MAMMALIA FROM NEPAL, SIKIM, AND TIBET, PRESENTED TO THE HON. EAST INDIA COMPANY BY B. H. HODGSON, ESQ., IN 1853*. BY THOMAS HORSFIELD, M.D., F.R.S., ETC.

(Mammalia, Pl. XLVII.–L.)

1. SEMNOPITHECUS SCHISTACEUS, Hodgson, J. A. S. Beng. ix. p. 1212; Horsf. Catal. Mamm. Mus. E. I. C. p. 6.

Presbytes Entellus, Gray, Catal. Hodgs. Coll. p. 1.

Langur, Hodgson.

Hab. Nepal; Hills.

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* Those marked with an asterisk were discovered since the publication of the Catalogue of Mammalia presented to the British Museum by B. H. Hodgson, Esq. in 1846.

2. Macacus Rhesus, Desm., Gray, Catal. Hodgs. Coll. p. 2.
Macacus (*Pithex*) *oinops*, Hodgson, J. A. S. Beng. ix. p. 1211
Hab. Nepal; Hills.

*3. Megaderma schistacea, Hodgson, J. A. S. Beng. xvi. p. 889, with a figure (1847); Horsfield, Ann. Nat. Hist. n. s. xvi. p. 101 (1855).
Megaderma Lyra, Geoffr. apud Kelaart, Prodr. Faunæ Zeylanicæ, Mammalia, p. 11.
Hab. Sikim Tarai.

*4. Rhinolophus perniger, Hodgson, J. A. S. Beng. xii. p. 414 (1843), xvi. p. 896; Blyth, J. A. S. Beng. xiii. p. 484; Horsfield, Ann. Nat. Hist. n. s. xvi. p. 102 (1855).
Hab. Central regions of the Sub-Himalaya.

5. Rhinolophus tragatus, Hodgs. J. A. S. Beng. iv. p. 699; Gray, Catal. Mamm. Brit. Mus. p. 22; Catal. Hodgson's Coll. p. 2; Blyth, J. A. S. Beng. xiii. p. 484; Horsfield, Ann. Nat. Hist. n. s. xvi. p. 102 (1855).
Hab. Central hilly regions, Nepal.

6. Hipposideros armiger, Hodgs. J. A. S. Beng. iv. p. 699; Gray, Catal. Mamm. Brit. Mus. p. 24; Catal. Hodgs. Coll. p. 3; Blyth, J. A. S. Beng. xiii. p. 488.
Hab. Nepal; Central hilly regions.

*7. Vespertilio Siligorensis, Hodgson, Horsfield, Ann. Nat. Hist. n. s. xvi. p. 102 (1855).
Hab. Nepal; Central Hills.

*8. Vespertilio Darjelingensis, Hodgson, Horsfield, Ann. Nat. Hist. n. s. xvi. p. 102 (1855).
Hab. Nepal; Central Hills.
"Differs only from the English *V. mystacinus* in having the tips of the fur of the back brighter."—R. H. Tomes, Ann. N. H. 1856, p. 27.

*9. Scotophilus Coromandelicus, F. Cuvier, sp.
Vespertilio coromandelicus, Lesch. & Cuv. Nouv. Ann. de la Mus.; Schinz, Syst. Mamm. p. 171; Horsfield, Ann. Nat. Hist. n. s. xvi. p. 103 (1855).
Hab. Nepal.

*10. Murina suillus, Temm. sp.
Vespertilio suillus, Temm. Monogr. ii. p. 224. t. 56. f. 4, 5, 6.
Murina suillus, Gray, Ann. Nat. Hist. 1842, p. 259.
Hab. Nepal.

*11. **BARBASTELLUS DAUBENTONII**, Mém. Acad. Par. 1759, ii. p. 8; Bell, Brit. Quad.
Barbastellus communis, Gray, Mag. Zool. & Bot. ii. p. 13.
Hab. Nepal.

*12. **PLECOTUS HOMOCHROUS**, Hodgson, J. A. S. Beng. xvi. p. 894; Horsfield, Ann. Nat. Hist. n. s. xvi. p. 103 (1855).
Hab. Central regions of the Sub-Himalaya.

*13. **PLECOTUS DARJELINGENSIS**, Hodgson, Horsfield, Ann. Nat. Hist. n. s. xvi. p. 103 (1855).
Hab. Nepal; Central Hills.

*14. **LASIURUS PEARSONI**, Horsfield, Catal. Mamm. East India Comp. Museum, p. 36 (1851); Ann. Nat. Hist. n. s. xvi. p. 103 (1855); Blyth, J. A. S. Beng. xx. p. 524.
Hab. Darjeling.

*15. **NYCTICEJUS NIVICOLUS**, Hodgson; Horsfield, Ann. Nat. Hist. n. s. xvi. p. 104 (1855).
Hab. Nepal.

16. **FELIS TIGRIS**, Linn.; Horsfield, Catal. Mamm. Mus. E. I. C. p. 43.
Hab. Tarai of Nepal.

17. **FELIS UNCIA**, Erxleb. Syst. Mamm. p. 508.
Leopardus Uncia, Gray, Catal. Mamm. Br. Mus. p. 41.
Uncia Irbis, Ehrenb. sp.; Gray, Ann. Nat. Hist. xiv. p. 394 (1854).
Felis Uncioides, Hodgson, MSS. List of Mamm. presented to E. I. C. Museum (1852); Horsfield, Ann. Nat. Hist. n. s. xvi. p. 105 (1855).
I'ker of Tibetans, Hodgson.
Hab. Tibet.

18. **FELIS MACROSCELOIDES**, Hodgson, Calc. Journ. N. H. iv. p. 286; Ill. P. Z. S. 1853, Mamm. t. 38; Horsfield, Ann. Nat. Hist. n. s. xvi. p. 105 (1855).
Felis macroscelis, Hodgson, J. A. S. Beng. xi. p. 275.
Felis, n. sp., Tickell, J. A. S. Beng. xii., with a figure.
Lamchitia of Tibetans, Hodgson.
Hab. Bengal; Tibet.

19. **FELIS MURMENSIS**, Hodgson, P. Z. S. 1832, p. 10.
Varietas *nigra*, Horsfield, Ann. Nat. Hist. n. s. xvi. p. 105 (1855).
Murmi Cat, Hodgson.
Hab. Hilly regions.

*20. **Felis Charltoni**, Gray, Brit. Mus.
Uncia Charltoni, Gray, Ann. Nat. Hist. xiv. p. 394 (1854).
Felis Duvancelli, Hodgson, MSS. 1852.
Hab. Hilly regions.

21. **Felis pardochrous**, Hodgson.
Felis pardochrous, Hodgs. Calcutta Journ. N. H. iv. p. 286.
Felis (*Leopardus*) *pardochrous*, Horsfield, Catal. Mamm. Mus. E. I. C. p. 47.
Hab. Hilly regions.

22. **Felis (Lynx) Chaus**, Güldenst.; Horsfield, Catal. Mamm. Mus. E. I. C. p. 50.
Chaus lybicus, Gray, Catal. Mamm. Brit. Mus. p. 45; Catal. Hodgs. Coll. p. 7.
Bowbhow, Nepalese, Hodgson.
Hab. Hills and Tarai of Nepal.

23. **Prionodon pardicolor**, Hodgs. Calcutta Journ. N. H. ii. p. 57; J. A. S. Beng. x. p. 909; Horsfield, Catal. Mamm. Mus. E. I. C. p. 52.
Linsang pardicolor, Gray.
Hab. Hills of Nepal.

24. **Viverra Zibetha**, Linn.; Gray & Hardw. Ill. Ind. Zool. 11. t. 5; Catal. Mamm. Brit. Mus. p. 52; Hodgs. Catal. p. 7; Horsfield, Catal. Mamm. Mus. E. I. C. p. 54.
Hab. Nepal; Hills and Tarai.

25. **Viverricula Indica**, Geoffr. sp.; Hodgson, J. A. S. Beng. x. p. 909; Horsfield, Catal. Mamm. Mus. E. I. C. p. 58.
Viverricula Malaccensis, Gray, Catal. Mamm. Brit. Mus. p. 48; Hodgs. Catal. p. 8.
Sayer, Hodgson.
Hab. Nepal; Tarai.

*26. **Paradoxurus strictus**, Hodgson (Pl. XLVII.); Horsfield, Ann. Nat. Hist. n. s. p. 105 (1855).
Hab. Nepal; Plains.

*27. **Paradoxurus quadriscriptus**, Hodgson (Pl. XLVIII.); Horsfield, Ann. Nat. Hist. n. s. xvi. p. 106 (1855).
Hab. Nepal; Hills.

28. **Paradoxurus Grayi**, Bennett, P. Z. S. 1835, p. 118.
Paguma Grayi, Gray, Catal. Mamm. Brit. Mus. p. 54; Catal. Hodgs. Coll. p. 9; Horsf. Catal. Mamm. Mus. E. I. C. p. 66.
Paradoxurus nipalensis, Hodgson, As. Res. xix. p. 76.
Hab. Nepal; Hills.

29. **Hyæna striata**, Zimm.
Hyæna virgata, Hodgson, MSS. 1852.
Hyæna striata, Horsfield, Ann. Nat. Hist. n. s. xvi. p. 107.
Lakerbagha, Nepal, Hodgson.
Hab. Tarai of Nepal.

30. **Cuon primævus**, Hodgson, Calcutta Journ. Nat. Hist. ii. pp. 205, 412; Gray, Catal. Mamm. Brit. Mus. p. 73; Catal. Hodgs. Coll. p. 10; Horsfield, Catal. Mamm. Mus. E. I. C. p. 73.
Hab. Hills and Plains.

31. **Canis aureus**, Linn. (Catal. Hodgson's Coll. p. 11; Horsfield, Catal. Mamm. Mus. E. I. C. p. 80).
Sacalius indicus, Hodgs. J. A. S. Beng. x. p. 918.
Siyar of the Nepalese, Hodgson.
Hab. Nepal; Plains.

32. **Vulpes Bengalensis**, Shaw, sp.; Gray, Catal. Mamm. Brit. Mus. p. 61; Catal. Hodgs. Coll. p. 11; Horsfield, Catal. Mamm. Mus. E. I. C. p. 84.
Vulpes indicus, Hodgson, J. A. S. Beng. x. p. 918.
Lomer of the Nepalese, Hodgson.
Hab. Nepal; Tarai.

33. **Vulpes montanus**, Pearson, Beng. Sport. Mag. iv. p. 126 (1836); Gray, Catal. Hodgs. Coll. p. 12; Horsfield, Catal. Mamm. Mus. E. I. C. p. 87.
Wamu of the Nepalese, Hodgson.
Hab. Tibet.

34. **Vulpes ferrilatus**, Hodgson, J. A. S. Beng. xi. p. 278, fig. (1842); Gray, Catal. Hodgs. Coll. p. 12.
Iger of Tibetans, Hodgson.
Hab. Tibet.

*35. **Lupus laniger**, Hodgson; Horsfield, Ann. Nat. Hist. n. s. xvi. p. 107 (1855).
Changu of Tibetans, Hodgson.
Hab. Tibet.

36. **Herpestes Nyula**, Hodgs. J. A. S. Beng. v. p. 236; Gray, Catal. Hodgs. Coll. p. 8; Horsfield, Catal. Mamm. Mus. E. I. C. p. 92.
Hab. Plains of Nepal.

37. **Urva cancrivora**, Hodgson, J. A. S. Beng. vi. p. 561; Gray, Catal. Hodgs. Coll. p. 8; Horsfield, Catal. Mamm. Mus. E. I. C. p. 93.
Hab. Tibet.

38. **Martes flavigula**, Boddaert, sp.; Gray, Catal. Hodgs. Coll. p. 12; Horsfield, Catal. Mamm. Mus. E. I. C. p. 98.
Hab. Nepal; Hills.

39. **Mustela canigula**, Hodgson, J. A. S. Beng. xi. p. 279 (1842); Calcutta Journ. N. H. iv. p. 287; Gray, Catal. Hodgs. Coll. p. 13.
Hab. Nepal; Hills.

*40. **Mustela strigidorsa**, Hodgson (Pl. XLIX.); Gray, P. Z. S. 1853, p. 191; Horsfield, Ann. N. H. n. s. xvi. p. 107 (1855).
Hab. Sikim.

41. **Mustela (Putorius) Kathiah**, Hodgs. J. A. S. Beng. iv. p. 702; Horsfield, Catal. Mamm. Mus. E. I. C. p. 102.
Mustela Kathiah, v. *auriventer*, Hodgs. J. A. S. Beng. x. p. 909; Gray, Catal. Hodgs. Coll. p. 13.
Kathia Nyul, Nepalese, *Hodgson*.
Hab. Kachars.

*42. **Putorius Tibetanus**, Hodgson, J. A. S. Beng. xviii. pt. 1. p. 446 (1849); Horsfield, Catal. Mamm. Mus. E. I. C. p. 105.
Tibetan Stoat, Hodgson.
Hab. Tibet.

43. **Helictis Nipalensis**, Hodgson, J. A. S. Beng. v. p. 237; Gray, Catal. Hodgs. Coll. p. 14; Horsfield, Catal. Mamm. Mus. E. I. C. p. 108; Gray, P. Z. S. 1853, p. 191.
Oker of the Nepalese, Hodgson.
Hab. Nepal; Tibet.

*44. **Arctonyx Isonyx**, Hodgson, MSS. (Pl. L.)
? *Arctonyx collaris*, F. Cuv.
Hab. Nepal; Tarai.

This species was discovered by Mr. Hodgson seven years back in the Tarai of Nepal, and is considered by him to be distinct from the *A. collaris*, but, upon comparison with specimens of *A. collaris* at the British Museum and the India House, its value as a distinct species requires more specimens for comparison.

*45. **Meles leucurus**, Hodgson, sp.; Gray, Ann. N. H. xii. n. s. p. 221; P. Z. S. 1853, p. 191; Horsfield, Ann. Nat. Hist. n. s. xvi. p. 108 (1855).
Taxidea leucurus, Hodgs. J. A. S. Beng. xvi. p. 763 (1847), with a figure.
Pseudomeles leucurus, Hodgson, MSS. 1852.
Tumpha of Tibetans, Hodgson.
Hab. Plains of Tibet.

46. Lutra Chinensis ?, Gray, Ann. N. H. 1836; Catal. Mamm. Br. Mus. p. 71; Catal. Hodgs. Coll. p. 14; Horsfield, Catal. Mamm. Mus. E. I. C. p. 116; Ann. N. H. n. s. xvi. p. 109 (1855).
Lutra Tarayensis, Hodgson, J. A. S. Beng. viii. p. 319 (1839); Blyth, J. A. S. Beng. xi. p. 99.
Udh of Nepalese, Hodgson.
Hab. Nepal; Hills and Tarai.

*47. Aonyx Sikimensis, Hodgson; Horsfield, Ann. N. H. n. s. xvi. p. 109 (1855).
Hab. Nepal; Hills and Tarai.
Aonyx sikimensis:—Snout to vent 24 inches; tail 13; head 4½; palma 2⅝; planta 3½. Colour: a medial earthy brown, paler below, especially on head and neck.—*Hodgson, MSS.*

48. Helarctos Tibetanus, Cuvier; Gray, Catal. Mamm. Brit. Mus. p. 73; Catal. Hodgs. Coll. p. 15; Horsfield, Catal. Mamm. Mus. E. I. C. p. 124.
Bhalu of the Nepalese, Hodgson.
Hab. Nepal; hilly regions.

49. Ailurus fulgens, F. Cuvier; Hardwicke, Trans. Linn. Soc. xv. p. 161; Gray, Catal. Mamm. Brit. Mus. p. 75; Catal. Hodgs. Coll. p. 15; Horsfield, Catal. Mamm. Mus. E. I. C. p. 126.
Ailurus ochraceus, Hodgson, J. A. S. Beng. xvi. p. 1118.
Hab. Nepal.

50. Talpa micrura, Hodgson, J. A. S. Beng. x. p. 910; Gray, Catal. Mamm. Br. Mus. p. 75; Catal. Hodgs. Coll. p. 16; Horsfield, Catal. Mamm. Mus. E. I. C. p. 129.
? *Talpa cryptura*, Blyth.
Purium of the Nepalese, Hodgson.
Hab. Nepal; Hills.

*51. Sorex murinus, Linn.; Gray, Catal. Hodgs. Coll. p. 16; Horsfield, Catal. Mamm. Mus. E. I. C. p. 134; Ann. N. H. n. s. xvi. p. 110; Blyth, J. A. S. Beng. 1855, p. 28; Tomes, Ann. N. H. n. s. xvii. p. 15 (1856).
Chuchunder, Hodgson.
Hab. Nepal; Plains.

*52. Sorex saturatior, Hodgson; Horsfield, Ann. N. H. n. s. xvi. p. 110 (1855); Tomes, Ann. N. H. n. s. xvii. p. 22.
Hab. Nepal; Hills.

*53. Sorex leucops, Hodgson; Horsfield, Ann. N. H. n. s. xvi. p. 111 (1855); Tomes, Ann. N. H. n. s. xvii. p. 22.
White-lipped Shrew, Hodgson.
Hab. Nepal; Hills.

54. SOREX PYGMÆUS, Hodgson, J. A. S. Beng. x. p. 910; Ann. N. H. xv. p. 269; Gray, Catal. Hodgs. Coll. p. 16; Horsfield, Ann. N. H. n. s. xvi. p. 111; Blyth, J. A. S. Beng. 1855, p. 32; Tomes, Ann. N. H. n. s. xvii. p. 20.
Hab. Nepal; Central Hills.

55. SOREX NEMORIVAGUS, Hodgson, Calc. Journ. N. H. iv. p. 288; Ann. N. H. xv. p. 269; Gray, Catal. Hodgs. Coll. p. 16; Horsfield, Ann. N. H. n. s. xvi. p. 111; Blyth, J. A. S. Beng. 1855, p. 31; Tomes, Ann. N. H. n. s. xvii. p. 18.
Hab. Nepal; Central Hills.

*56. SOREX SOCCATUS, Hodgson, Ann. N. H. xv. p. 270; ? Blyth, J. A. S. Beng. 1855, p. 30; Tomes, Ann. N. H. n. s. xvii. p. 17.
Hab. Nepal; Central Hills.

*57. SORICULUS NIGRESCENS, Gray, sp.
Corsira nigrescens, Gray, Ann. N. H. x. p. 261 (1842).
Soriculus nigrescens, Blyth, J. A. S. Beng. 1855, p. 36.
Sorex Sikimensis, Hodgson, Ann. N. H. iii. n. s. p. 203; Horsfield, Catal. Mamm. Mus. E. I. C. p. 136; Ann. N. H. n. s. xvi. p. 111.
Sorex soccatus, Hodgs. Calc. Journ. N. H. iv. p. 288 (not described).
Sorex aterrimus, Blyth, J. A. S. Beng. 1843, p. 128?
Chika of the Nepalese, Hodgson.
Hab. Nepal.

*58. CORSIRA (?) CAUDATA, Hodgson, sp.
Sorex caudatus, Hodgson, Ann. N. H. n. s. iii. p. 203; Horsfield, Catal. Mamm. Mus. E. I. C. p. 135; Ann. N. H. n. s. xvi. p. 111.
Corsira (?) *caudata*, Blyth, J. A. S. Beng. 1855, p. 37; Tomes, Ann. N. H. n. s. xvii. p. 27.
Hab. Sikim and Darjeeling.

"After a very careful comparison of two specimens of *C. caudata*, in the Museum at the India House, with a specimen of the *C. alpina* of Europe, I concluded that they were very closely affined, if not perfectly identical. The naked compressed tip of the tail in the last-mentioned species, as remarked by Mr. Blyth, also occurs in one of the examples of *C. caudata*; indeed, were this specimen to be placed along with the European species, it would be almost impossible to distinguish them."—*R. F. Tomes.*

59. MUS NIPALENSIS, Hodgson, J. A. S. Beng. x. p. 915; Gray, Catal. Hodgs. Coll. p. 19.
Hab. Nepal; Hills.

*60. MUS TARAYENSIS, Hodgson; Horsfield, Ann. N. H. n. s. xvi. p. 112 (1855).
Hab. Nepal; Tarai; Plains.

*61. Mus Morungensis, Hodgson; Horsfield, Ann. N. H. n. s. xvi. p. 112 (1855).
Hab. Nepal, Tarai, Plains.

*62. Mus plurimammis, Hodgson; Horsfield, Ann. N. H. n. s. xvi. p. 112 (1855).
Hab. Nepal, Tarai, Plains.

Remark.—This species, according to Mr. Hodgson, has eighteen teats.

*63. Mus æquicaudalis, Hodgson, Ann. N. H. n. s. iii. p. 203; Horsfield, Catal. Mamm. Mus. E. I. C. p. 144.
Hab. Nepal; Hills.

*64. Mus caudatior, Hodgson, Ann. N. H. n. s. iii. p. 203; Horsfield, Catal. Mamm. Mus. E. I. C. p. 144.
Hab. Nepal; Hills.

*65. Neodon Sikimensis, Hodgson, Ann. N. H. n. s. iii. p. 203; Horsfield, Catal. Mamm. Mus. E. I. C. p. 146.
Phalchua of the Nepalese, Hodgson.
Hab. Sikim, 7000 to 15,000 feet.

"Snout to vent $4\frac{3}{4}$ inches; head $1\frac{1}{4}$; tail $1\frac{3}{4}$; palma $\frac{7}{16}$ths; planta $\frac{3}{4}$ths. Weight $1\frac{1}{4}$ oz. Teats six in number. Intestines 30 inches; small 16 inches; great 14 inches. Cæcum 6 inches, sacced and banded. Stomach bagpipe-shaped, with slight medial constriction and proximate orifices.

"Breeds in hollow decayed fallen trees, or roots of trees. Nest saucer-shape, made of soft grass. Young three or four."—*Hodgson, MSS.*

66. Arvicola ? Myothrix, Hodgson, J. A. S. Beng. x. p. 915.
Mus ? Myothrix, Hodgson, Ann. N. H. 1845, p. 267; Gray, Catal. Hodgs. Coll. p. 15.
Hab. Nepal; Central Hills.

*67. ? Hystrix leucurus, Sykes, P. Z. S. 1831, p. 103; Gray, Catal. Hodgson's Coll. p. 20.
Hystrix Alophus, Hodgson, MSS. 1852.
Sahi of the Nepalese, Hodgson.
Hab. Nepal; Hills and Plains.

68. Lepus pallipes, Hodgson, J. A. S. Beng. xi. p. 288.
Lepus Taloi (Pallas), Gray, Catal. Mamm. Brit. Mus. p. 127; Catal. Hodgs. Coll. p. 20.
Rek, *Rigong* of the Tibetans, Hodgson.
Hab. Tibet.

69. **LEPUS MACROTUS**, Hodgson, J. A. S. Beng. ix. p. 1183; Gray, Catal. Hodgs. Coll. p. 20; Horsfield, Catal. Mamm. Mus. E. I. C. p. 147.
Lepus ruficaudatus, Is. Geoffroy.
Hab. Nepal; Plains.

*70. **CAPROLAGUS HISPIDUS**, Pearson.

Lepus hispidus, Pearson, Beng. Sport. Mag. 1843, p. 131.
Caprolagus hispidus, Blyth, J. A. S. Beng. xiv. p. 248; Horsfield, Catal. Mamm. Mus. E. I. C. p. 148.
Hab. Nepal; Tarai.

71. **LAGOMYS NIPALENSIS**, Hodgson, J. A. S. Beng. x. p. 854; Gray, Catal. Hodgs. Coll. p. 21; Horsfield, Catal. Mamm. Mus. E. I. C. p. 148.
The Abra, Hodgson.
Hab. Tibet; Nepal.

72. **SCIURUS MACRUROÏDES**, Hodgson, Calcutta Journ. N. H. 1841, p. 220; Gray, Catal. Hodgs. Coll. p. 22.
Salheu of the Nepalese, Hodgson.
Hab. Nepal; Hills.

73. **SCIURUS LOKRIAH**, Hodgs. J. A. S. Beng. x. p. 915; Gray, Catal. Hodgs. Coll. p. 23; Horsf. Catal. Mamm. Mus. E.I.C. p. 153.
Hab. Nepal; Hills.

74. **SCIURUS LOKROIDES**, Hodgs. J. A. S. Beng. v. p. 232; Gray, Catal. Hodgs. Coll. p. 23; Horsf. Catal. Mamm. Mus. E.I.C. p. 153.
Hab. Nepal; Hills.

*75. **SCIURUS M'CLELLANDI**, Horsfield, P. Z. S. 1839; Catal. Mamm. Mus. E. I. C. p. 151; Ann. Nat. Hist. n. s. xvi. p. 113.
Sciurus Horsfieldi, Hodgson, MSS. 1852.
Striped Squirrel, Hodgson.
Hab. Sikim; Assam (*M'Clelland*).

76. **PTEROMYS NOBILIS**, Gray.

Sciuropterus nobilis, Gray, Ann. N. H. 1842, p. 263.
Pteromys nobilis, Gray, Catal. Hodgs. Coll. p. 22; Horsf. Catal. Mamm. Mus. E. I. C. p. 160.
Sciuropterus chrysothrix, Hodgs. J. A. S. Beng. xiii. p. 67.
Puraj-blakut of the Nepalese, Hodgson.
Hab. Nepal; Hills.

77. **PTEROMYS CANICEPS**, Gray.

Sciuropterus caniceps, Gray, Ann. N. H. 1842, p. 262.
Pteromys caniceps, Gray, Catal. Hodgs. Coll. p. 21; Horsf. Catal. Mamm. Mus. E. I. C. p. 160.
Sciuropterus senex, Hodgs. J. A. S. Beng. xiii. p. 68.
Suraj-blakut, Hodgson.
Hab. Nepal; Hills.

78. **Pteromys magnificus**, Hodgson, J. A. S. Beng. v. p. 231; Gray, Catal. Hodgs. Coll. p. 22; Horsf. Catal. Mamm. Mus. E. I. C. p. 161.

Suraj-blakut, Hodgson.

Hab. Nepal; Hills.

79. **Sciuropterus alboniger**, Hodgson, J. A. S. B. v. p. 231; Gray, Catal. Hodgs. Coll. p. 22; Horsf. Catal. Mamm. Mus. E. I. C. p. 163.

Hab. Nepal; Hills.

80. **Arctomys tibetanus**, Hodgson, J. A. S. Beng. xii. p. 409; Gray, Catal. Hodgs. Coll. p. 24; Horsfield, Ann. N. H. n. s. xvi. p. 113.

Jabra, or *Kadia-peu*, of the Tibetans, Hodgson.

Hab. Tibet.

81. **Rhizomys badius**, Hodgs. Calcutta Journ. N. H. ii. p. 60; Gray, Catal. Hodgs. Coll. p. 24; Horsf. Catal. Mamm. Mus. E. I. C. p. 165.

Hab. Nepal and Sikim.

82. **Panthalops Hodgsoni**, Abel, sp.

Antilope Hodgsoni, Abel, Edin. Journ. Sci. 1827, p. 165.

Panthalops Hodgsoni, Hodgson, J. A. S. Beng. xi. p. 282; Gray, Catal. Mamm. Br. Mus. (1852) p. 53.

Kemas Hodgsoni, Gray, Catal. Hodgs. Coll. p. 26; Horsf. Catal. Mamm. Mus. E. I. C. p. 166.

Cheru or *Chwe*, Tibetans, Hodgson.

Hab. Tibet.

*83. **Procapra picticauda**, Hodgson, J. A. S. Beng. xv. p. 334; Horsfield, Catal. Mamm. Mus. E. I. C. p. 169; Gray, Catal. Mamm. Br. Mus. 1852, p. 55.

Hab. Tibet.

84. **Capricornis bubalina**, Hodgson, sp.

Antilope bubalina, Hodgs. P. Z. S. 1832, p. 12.

Capricornis Thar, Ogilby, P. Z. S. 1836, p. 139.

Capricornis bubalina, Gray, Catal. Hodgs. Coll. p. 27; Horsf. Catal. Mamm. Mus. E. I. C. p. 168.

Hab. Nepal; Hills.

85. **Næmorhedus Goral**, Hardwicke, sp.

Antilope Goral, Hardw. Linn. Trans. xiv. p. 518. t. 14.

Nemorhedus Goral, Gray, Catal. Hodgs. Coll. p. 27; Catal. Mamm. Brit. Mus. 1852, p. 112; Horsf. Catal. Mamm. Mus. E. I. C. p. 168.

Hab. Nepal; Hills.

86. **Hemitragus Jemlaicus**, H. Smith, sp.

Capra Jemlaica, H. Smith, Griff. An. Kingd. iv. t. 194; Horsf. Catal. Mamm. Mus. E. I. C. p. 170.

Hemitragus Jemlaicus, Hodgson; Gray, Catal. Hodgs. Coll. p. 28; Catal. Mamm. Brit. Mus. 1852, p. 144.

Hemitragus quadrimammis, Hodgson, J. A. S. Beng. v. p. 254.

Hab. Nepal; Hills.

87. **Ovis Aries**, Linn.

Var. *Ovis Hoonia*, Hodgson, J. A. S. Beng. i. p. 348; Gray, Catal. Hodgs. Coll. p. 30; Catal. Mamm. Br. Mus. 1852, p. 166.

Hab. Tibet.

*Var. *Ovis Changluk*, Hodgson, MSS. 1852.

Changluk Sheep, Hodgson.

Hab. Tibet.

Var. *Ovis Barwal*, Hodgson, J. A. S. Beng. x. p. 913; Gray, Catal. Mamm. Br. Mus. 1852, p. 165.

Ovis Ammonoïdes, var. I., Gray, Catal. Hodgs. Coll. p. 29.

Hab. Nepal; Hills.

88. **Ovis Ammonoïdes**, Hodgson, sp.

Ovis Ammonoïdes, Hodgs. J. A. S. Beng. x. p. 236; Gray, Catal. Hodgs. Coll. p. 29.

? *Ægaceros Argali*, Pallas, Zool. Ross. As. i. p. 231. t. 20, 21.

Caprovis Argali, Gray, Catal. Mamm. Brit. Mus. 1852, p. 174.

Ovis Argali, Hodgson, J. A. S. Beng. i. p. 347.

? *Ovis Hodgsonii*, Blyth, P. Z. S. 1840, p. 65.

Nyen or *Bharal*, Hodgson.

Hab. Tibet.

89. **Ovis Nahoor**, Hodgson, J. A. S. Beng. iv. p. 492; Gray, Catal. Hodgs. Coll. p. 29.

Pseudois Nahoor, Gray, Knowsley, Menag. p. 40; Catal. Mamm. Br. Mus. 1852, p. 177; Horsf. Catal. Mamm. Mus. E. I. C. p. 176.

Na, or *Nawa*, or *Nahur*, Hodgson.

Hab. Tibet.

90. **Moschus moschiferus**, Linn.; Gray, Cat. Hodgson's Coll. p. 30; Catal. Mamm. Brit. Mus. 1852, p. 244; Horsf. Catal. Mamm. Mus. E. I. C. p. 177.

Kastury of the Tibetans, Hodgson.

Hab. Tibet.

91. **Moschus leucogaster**, Hodgson, J. A. S. Beng. viii. p. 203; Gray, Catal. Hodgs. Coll. p. 31; Catal. Mamm. Br. Mus. 1852, p. 245; Horsf. Catal. Mamm. Mus. E. I. C. p. 177.

Kastury, Hodgson.

Hab. Tibet.

*92. ? BIBOS FRONTALIS, Lambert, sp.
Hab. Nepal; Tarai.

93. POEPHAGUS GRUNNIENS, Linn. sp.
Bos grunniens, Linn. S. N. 12. i. p. 99.
Poephagus grunniens, Gray, Catal. Mamm. Br. Mus. p. 153; id. Ung. Furcip. p. 40; Horsf. Catal. Mamm. Mus. E. I. C. p. 184.
Bison Poephagus, Gray, Catal. Hodgs. Coll. p. 25.
Hab. Tibet.

A figure of the calf of *Poephagus grunniens* is given in the Illustrated Proc. Zool. Soc. 1853, pl. 35.

*94. BUDORCAS TAXICOLOR, Hodgson, J. A. S. Beng. 1850, p. 65. t. 1; Gray, Catal. Mamm. Br. Mus. 1852, p. 45; Horsfield, P. Z. S. 1853, Mamm. pl. 36.
Nemorhœdus taxicolor, Turner, P. Z. S. 1849.
Takin, Hodgson.
Hab. Eastern Himalaya (Assam).

95. RUSA DIMORPHE, Hodgson, J. A. S. Beng. 1844, fig.; Ann. N. H. xiv. p. 74; Gray, Catal. Hodgs. Coll. p. 33; Catal. Mamm. Br. Mus. 1852, p. 209.
Séving, Hodgson.
Hab. Lower Hills and deep valleys of Central Nepal.

*96. CERVUS AFFINIS, Hodgson, J. A. S. Beng. 1841, p. 721; Gray, Catal. Mamm. Br. Mus. 1852, p. 199.
Cervus tibetanus, Hodgs. J. A. S. Beng. 1850, p. 466.
Siarupchu or *Shou*, Hodgson.
Hab. Tibet.

97. RUSA JARAI, Hodgson.
Cervus Hippelaphus or *Phursa Jarai*, Hodgson.
Rusa Hippelaphus, var., Gray, Catal. Hodgs. Coll. p. 34.
Rusa Aristotelus, var., Gray, Catal. Mamm. Brit. Mus. 1852, p. 206.
Jarai, Hodgson.
Hab. Nepal; Tarai.

98. CERVULUS MOSCHATUS, De Blainv.
Stylocerus Ratwa, Hodgson, J. A. S. Beng. x. p. 914.
Muntjacus vaginalis, Gray, Catal. Hodgs. Coll. p. 31.
Cervulus moschatus, Horsfield, Catal. Mamm. Mus. E. I. C. p. 190; Gray, Catal. Mamm. Br. Mus. 1852, p. 218.
Rathúa, Hodgson.
Hab. Nepal; Hills and Tarai.

Var. Entirely black.
Cervus melas, Ogilby, P. Z. S. in Royle's Himal. p. 73.
Hab. Nepal; Hills.

99. Hyelaphus porcinus, Zimm. sp.

Cervus porcinus, Zimmerman, Schreb. t. 251.

Hyelaphus porcinus, Sundevall, Pecora, 58; Horsfield, Catal. Mamm. Mus. E. I. C. p. 189; Gray, Catal. Mamm. Br. Mus. 1852, p. 215.

Axis porcinus, Hodgson, Gray, Catal. Hodgs. Coll. p. 33.

Laghŭnă, Hodgson.

Hab. Nepal; Tarai.

*100. Asinus Kiang, Moorcroft; Gray, Knowsley Menag. p. 72; Horsf. Catal. Mamm. Mus. E. I. C. p. 190.

Asinus Hemionus (Pallas), Gray, Catal. Mamm. Br. Mus. 1852, p. 272.

Kiang.

Hab. Tibet.

101. Sus indicus, Gray, Catal. Mamm. Br. Mus. p. 185.

Sus Aper, Hodgson, J. A. S. Beng. x. p. 911.

Sus scrofa, var. *Indicus*, Horsf. Catal. Mamm. Mus. E. I. C. p. 193.

Hab. Nepal; Tarai.

*102. Porcula Salvania, Hodgson, J. A. S. Beng. 1847, p. 423; Horsfield, P. Z. S. 1853; Mamm. pl. 37.

Pigmy Hog of the Saul Forest, Hodgson.

Hab. Nepal; Tarai.

103. Manis pentadactyla, Linn.

Manis pentadactyla, Linn.; Horsf. Catal. Mamm. Mus. E. I. C. p. 196.

Manis crassicaudata, Griffith's An. King. iii. p. 507.

Bajarkit, Hodgson.

Hab. Nepal; Hills.

8. DESCRIPTIONS OF COLEOPTEROUS INSECTS IN THE COLLECTION OF THE BRITISH MUSEUM, HITHERTO APPARENTLY UNNOTICED. BY ADAM WHITE.

(Annulosa, Pl. XL.)

In addition to the species described in my previous paper, read on the 12th of February last, I have reason to believe that the following are also new.

1. Deucalion Wollastoni, n. s. (Pl. XL. fig. 6.)

D. aterrimus, capite post oculos in mare elongato, thorace lævigato, lateribus inermibus, elytris dorso depressis, a basi ultra medium punctato-impressis, singulis lineis tribus lævibus longitudinalibus.

Hab. Lord Howe's Island.

Although this Longicorn differs in some particulars from either of the species of Mr. Wollaston's most interesting genus, I am unwilling to form another genus for its reception till the group has been more studied. The antennæ in the female are considerably longer than the elytra: in the male they are very long; the head in the male is considerably produced behind the eyes; the thorax is twice constricted: above the surface is smooth, beneath before the fore legs it is delicately and closely transversely striated.

2. Moneilema albo-pictum, n. s. (Pl. XL. fig. 7.)

M. aterrimum, thorace elytrisque pilis albis variegatis; oculis antice pilis albis marginatis, capite inter oculos pilis albis ornato.

Long. lin. 8½.
Hab. Mexico.

3. Moneilema lævidorsale, n. s.

M. aterrimum, supra læve, elytris lateribus valde compressis, basi punctatis, dorso carina separatis.

Long. lin. 8.
Hab. Mexico.

4. Moneilema ? longipes, n. s.

M. scabriuscule punctatum, aterrimum, pedibus elongatis crassis, thoracis lateribus obsolete tuberculatis; tarsis subtus fulvis.

Long. lin. 8.
Hab. "China ?"

This species differs somewhat in form from the others; it is longer and less squat; the spine on each side of the thorax is almost obsolete; the legs, especially the femora, are longer and thicker; the coxæ have no spot of hairs. It is rather coarsely and generally punctured, even on the legs and the antennæ; the tibiæ of all the legs are considerably bent at their origin.

This was obtained on the voyage of H.M.S. Sulphur, and is more likely to be from the west coast of America than from China.

5. Anisocerus onca. (Pl. XL. fig. 8.)

A. pallide ochraceus rufescenti tinctus; capite thoraceque nigro maculatis et fasciatis; elytris singulis 17–18 *maculis nigris; corpore subtus nigro fasciato; antennis articulo tertio apice nigro-fasciculato; tibiis tarsisque pallidis, tibiis apice nigris.*

6. Anisocerus capucinus. (Pl. XL. fig. 9.)

A. ater, genis miniaceo vittatis; scutello nigro; elytris miniaceis, fasciis tribus transversis et macula ante apicem nigris, sutura nigra.

7. Anisocerus dulcissimus. (Pl. XL. fig. 10.)

A. ater, genis miniaceo vittatis; elytris sulphureis seu albido-flavescentibus; fascia basali angusta et scutello miniaceis, *fascia lata ante medium obscure miniacea; marginibus apicali et laterali miniaceis; punctis quatuor nigris in parte postica elytrorum.*

These three fine species of the peculiarly Brazilian genus *Anisocerus* are described in the second part of the Museum Catalogue of Longicorn Beetles, pp. 405, 406. It is just possible that the two last so-called species may eventually be found to be one. We have two specimens of the last which differ from each other in coloration, and probably connecting varieties may yet be sent to our collections from the banks of the Amazon. The *A. capucinus* was first obtained at Para by J. P. George Smith, Esq. of Liverpool; the *A. dulcissimus* was found on the Tapayos, a tributary of the Amazon, by Mr. Bates, who also sent the *A. Onca* from Ega, a locality on the same great river, which has proved to be very prolific in insect life.

8. PHÆDINUS XANTHOMELAS, n. s. (Pl. XL. fig. 11.)

P. niger, abdomine subtus pallido, elytris sulphureis, apice maculaque ante medium nigris; femoribus subtus ultra medium ciliatis.

Long. lin. 6¾.

Hab. Villa Nova, in ripis fluvii Amazon (*Coll. Bates*).

Head wideish, black; eyes ferruginous; a yellow mark on the clypeus, with many scattered punctures. Antennæ with the two basal joints shining, the others dull; joints from the third to the tenth dilated triangularly at the tip on the inner edge; terminal joint oblong, sides parallel, tip pointed. Thorax densely punctured and hairy, a smooth spear-shaped space on the back in the middle, pointed in front, a tubercle on each side; scutellum black. Elytra rounded at the tip, of a sulphur-yellow, each broadly tipped with black, and having a subtriangular spot just before the middle; each elytron with two parallel costæ, evanescent about the middle just behind the black spot which lies across them. Under side of abdomen pale ochraceous; legs black; femora grooved beneath at the base, edges of the groove ciliated with pale hairs.

Having only seen a single specimen of this curious species, I am unwilling to give it a new generic name, although its short form, simple sternum, grooved and ciliated femora, and the soft under side of abdomen, with other characters, show that it considerably differs from *Phædinus*.

9. PHŒBE CONCINNA, n. s. (Pl. XL. f. 12.)

P. albido-pubescens, thorace postice pallide violaceo, elytris pallide violaceis, fascia latiuscula ante apicem alba, pedibus pallide flavis, antennis basi flavis, apice fuscis, capite bicornuto.

Long. lin. 5–5½.

Hab. Ega, on the banks of the Amazon (*Coll. Bates*).

A most delicately coloured species of the genus *Phœbe* of Serville. The head, thorax, and body are clothed with a dense white pubescence; the hinder part of the thorax has a pale violet band with a projecting lobe in front. The elytra are covered with a most delicate pale violet pubescence, passing into white at the tip, and with a rather wide transverse white band before the tip, widest at the sutures. The antennæ spring from a portion of the head, which divides each eye into two portions; the first four joints are pale yellow, the others are brown; the face has two projecting upturned horns, which are sharp and brown, and when viewed in front have a semicircular outline. The abdominal segments beneath in the middle and at the end are tinged with yellowish-pink. The legs are of a delicate yellow.

10. AGELASTA CALLIZONA, n. s. (Pl. XL. fig. 13.)

A. nigra, supra pube curta griseola reticulata; elytris fascia transversa mediana rubescente albo-reticulata, apice rubescentibus; femoribus supra tibiis basi rubescentibus, tibiis apice nigro-fasciculatis, tarsis aurato-fulvis, articulis basalibus supra nigris.

Long. lin. 6–9½.

Hab. Sarawak, Borneo (*Coll. A. R. Wallace*).

Blackish, with scattered punctures; the head, thorax, and elytra reticulated all over with a short griseous pubescence; the elytra at the tip and a transverse band across the middle of a pinkish-red, reticulated with white; sides of thorax, plate above, middle legs, and band behind base of hind legs pinkish-red; femora on the upper side and tibiæ, except at tip, pinkish-red; tibiæ at the ends black, and clothed thickly with hairs. Tarsi of a tawny golden-yellow, the base of the last joint above and the upper side of other joints black. Antennæ blackish-brown, basal joint the longest, reticulated with griseous pubescence, five terminal joints short brown-black, the others ringed, the sixth joint pinkish-grey, except at the tip, which is black.

11. AGELASTA WALLACII, n. s.

A. capite nigro-fusco, ochraceo vittato; thorace nigro-fusco lateribus albidis, dorso ochraceo quinque-lineato tribus lineis abbreviatis; elytris nigro-fuscis, fascia lata alba transversa; elytris singulis basi ochraceo uni-guttatis, apice quinque maculatis pedibus ochraceis, tarsis supra nigris.

Cat. Longicorns, Brit. Mus. pt. 2. pl. 10. f. 10.

Long. lin. 6–8.

Hab. Borneo (Sarawak) (*Coll. A. R. Wallace*).

Head blackish-brown, cheeks and face banded with ochraceous pubescence, crown with three ochraceous lines; antennæ dark ferruginous, outside of first joint and base of the four succeeding joints pale ochrey. Thorax blackish-brown, sides margined with whitish pubescence; the back with five longitudinal ochraceous lines, two extending from front to hind margins, the alternate three abbreviated. Scutellum of a deep blackish-brown. Elytra deep blackish-brown, with a very wide white pubescent band, which is continued on the underside of the thorax; an ochraceous spot at the base, a little white spot on the suture behind the scutellum; each elytron with five ochraceous marks on the apical half, three on the suture. Legs ochrey; femora subferruginous; tarsi above black; claw, except at the base and tip, ochrey.

12. AGELASTA AMICA, n. s. (Pl. XL. fig. 14.)

A. nigrescenti-fusca, capite thoraceque albo-lineatis elytris rufo-fuscis cinereo polystictis, punctis majoribus nigris, fasciis duabus subundatis nigris, anteriore interrupta.

Long. lin. 6–6½.

Hab. Borneo (Sarawak) (*Coll. A. R. Wallace*).

Blackish-brown; head lineolated longitudinally with white. Thorax above with about ten white lineolets arranged longitudinally. Scutellum blackish. Elytra mostly covered with a light reddish-brown pubescence, varied with many small black dots, and with two transverse, somewhat waved, black bands, the anterior ones interrupted. Abdomen black, sides with white pubescence, edges ciliated with white; undersides with greyish pubescence; middle black, sides spotted with black. Legs cinereous; tarsi and tips of tibiæ black.

13. AGELASTA POLYNESUS, n. s.

A. nigro-brunnea, capite thoraceque cinereo lineatis; scutello cinereo; elytris cinereo irregulariter lineatis et notatis; pedibus cinereo-pubescentibus.

Cat. Longicorns, Brit. Mus. pt. 2. pl. 10. f. 9.

Long. lin. 6–7½.

Hab. Borneo (Sarawak).

Of a very dark ferruginous brown. Head with five cinereous lines and a short one behind each antenna. Thorax with seven cinereous pubescent lines, the central one the slightest; scutellum cinereous; elytra covered with many irregular pubescent cinereous lines and marks, well relieved by the dark blackish-brown background; under side covered with whitish pubescent hairs; abdomen down the middle nearly bare of hairs; legs with cinereous pubescence.

14. AGELASTA NEWMANNI, n. s. (Pl. XL. fig. 15.)

A. cærulescenti-cinerea pubescens, thorace nigro transversim unifasciato, elytris nigro bifasciatis et maculatis.

Long. lin. 6½.

Hab. Borneo (Sarawak) (*Coll. A. R. Wallace*).

The greater part of the insect covered with a bluish-grey pubescence, the head with some black marks, the antennæ black, the five basal joints bluish-grey at the base; thorax above with a transverse black band, the front and hind margins running into the greyish pubescent part. Scutellum covered with grey pubescence. Elytra with two transverse black bands, one before the other behind the middle; the parts clothed with greyish pubescence have a few black spots, those between the bands arranged transversely, those at the apex triangularly.

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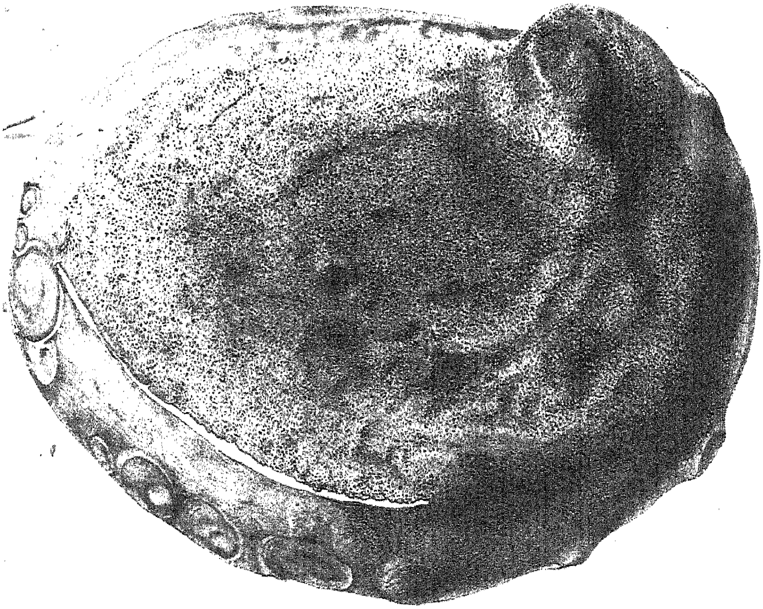

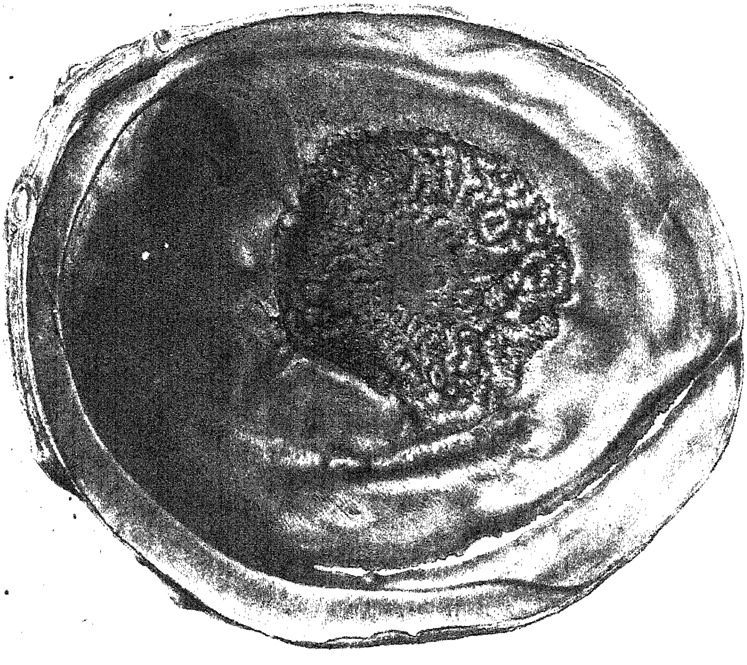

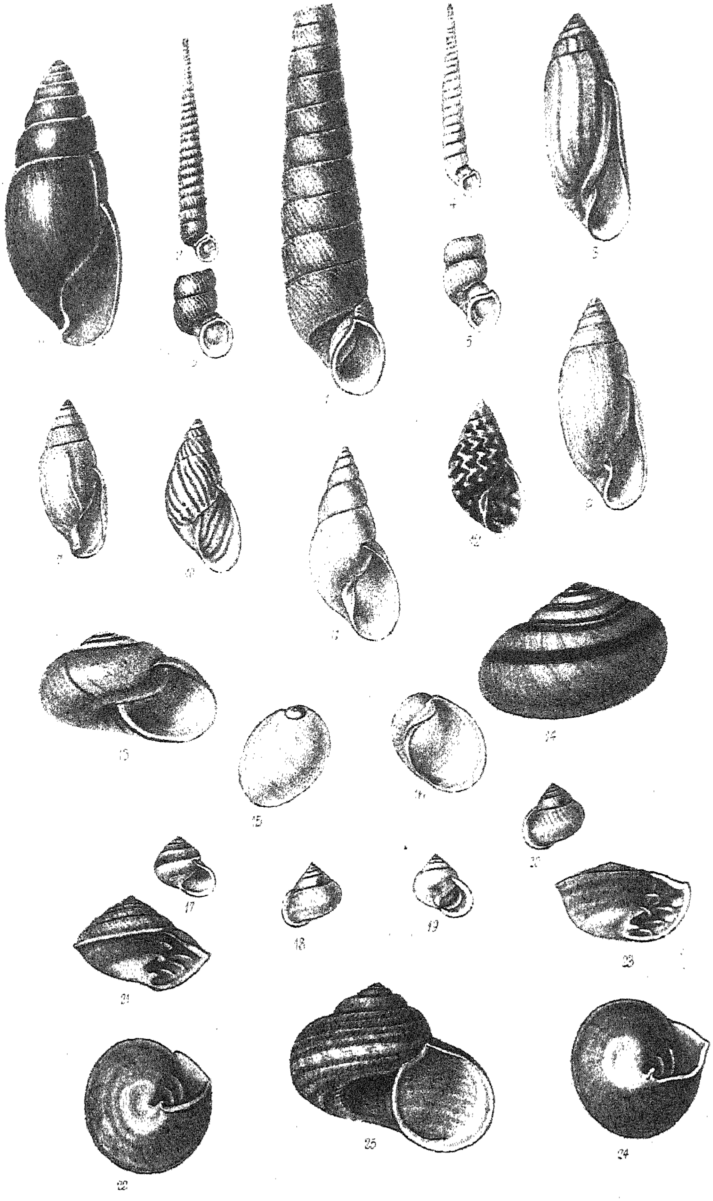

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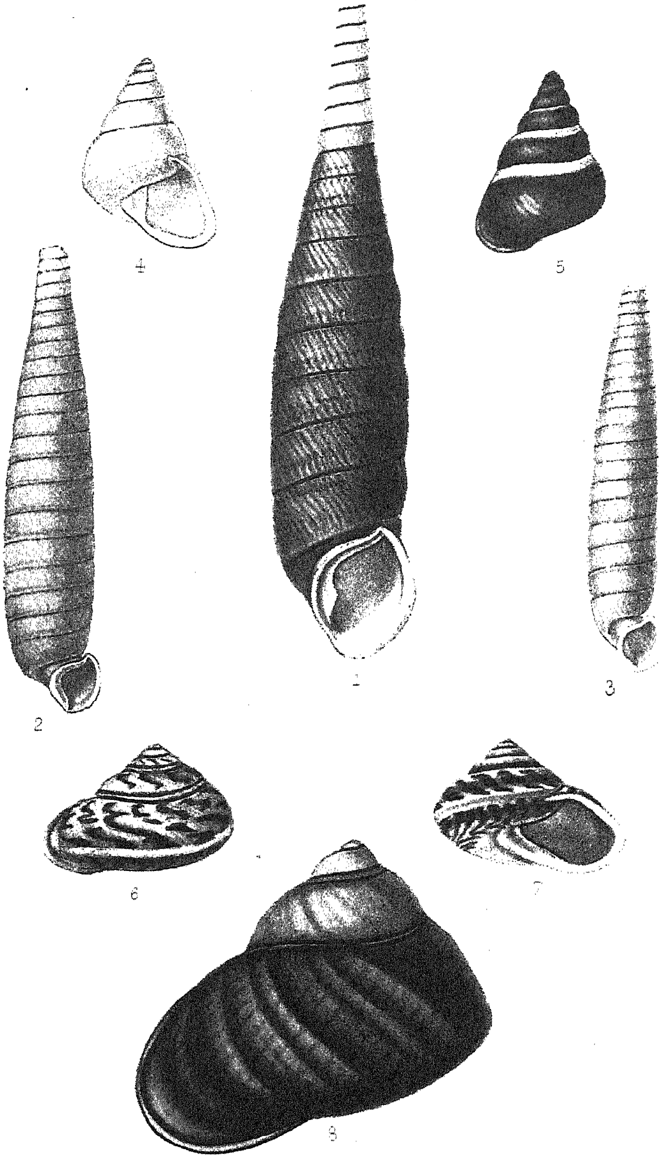

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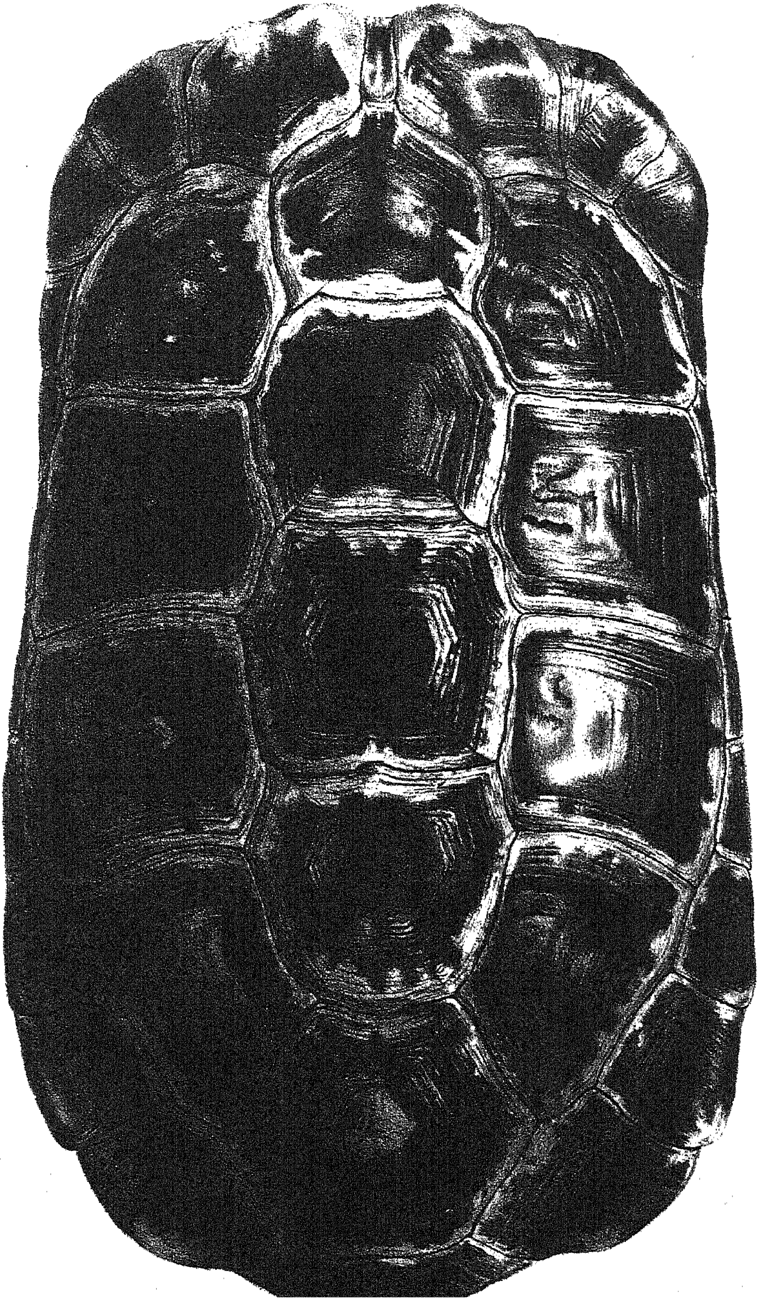

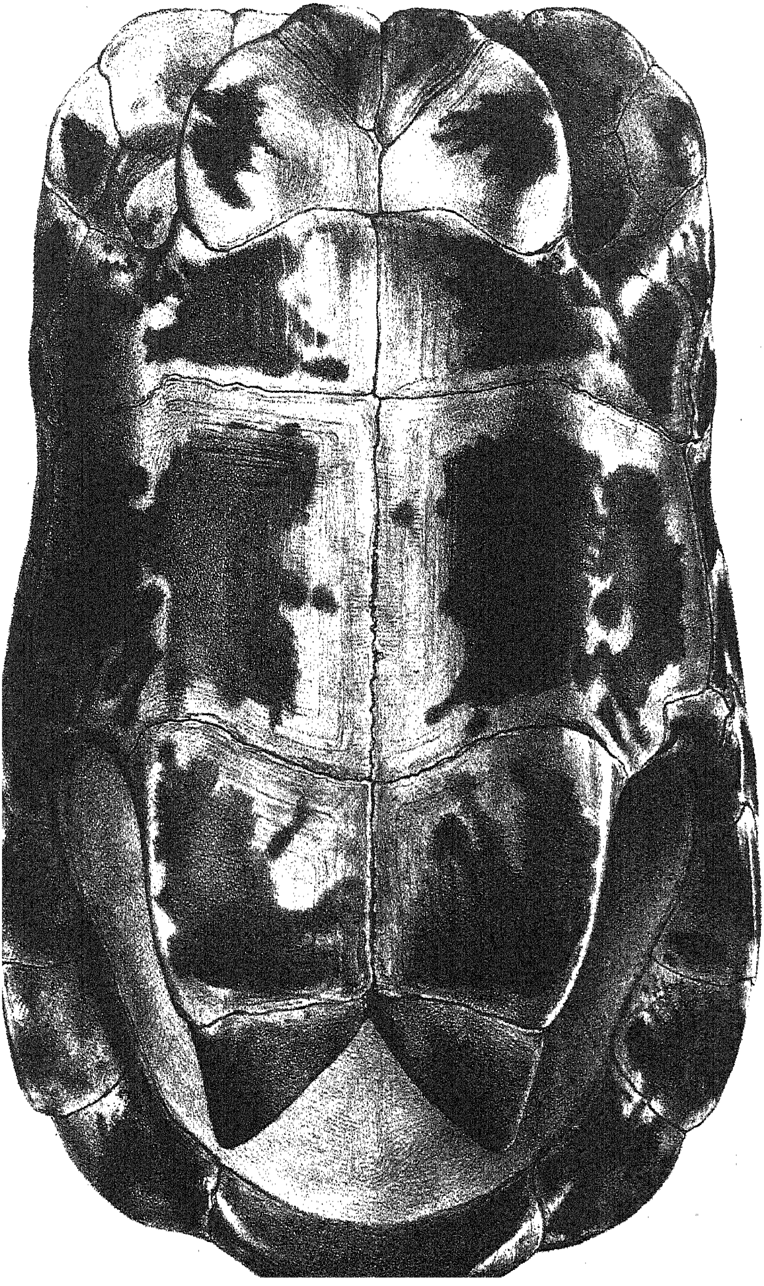

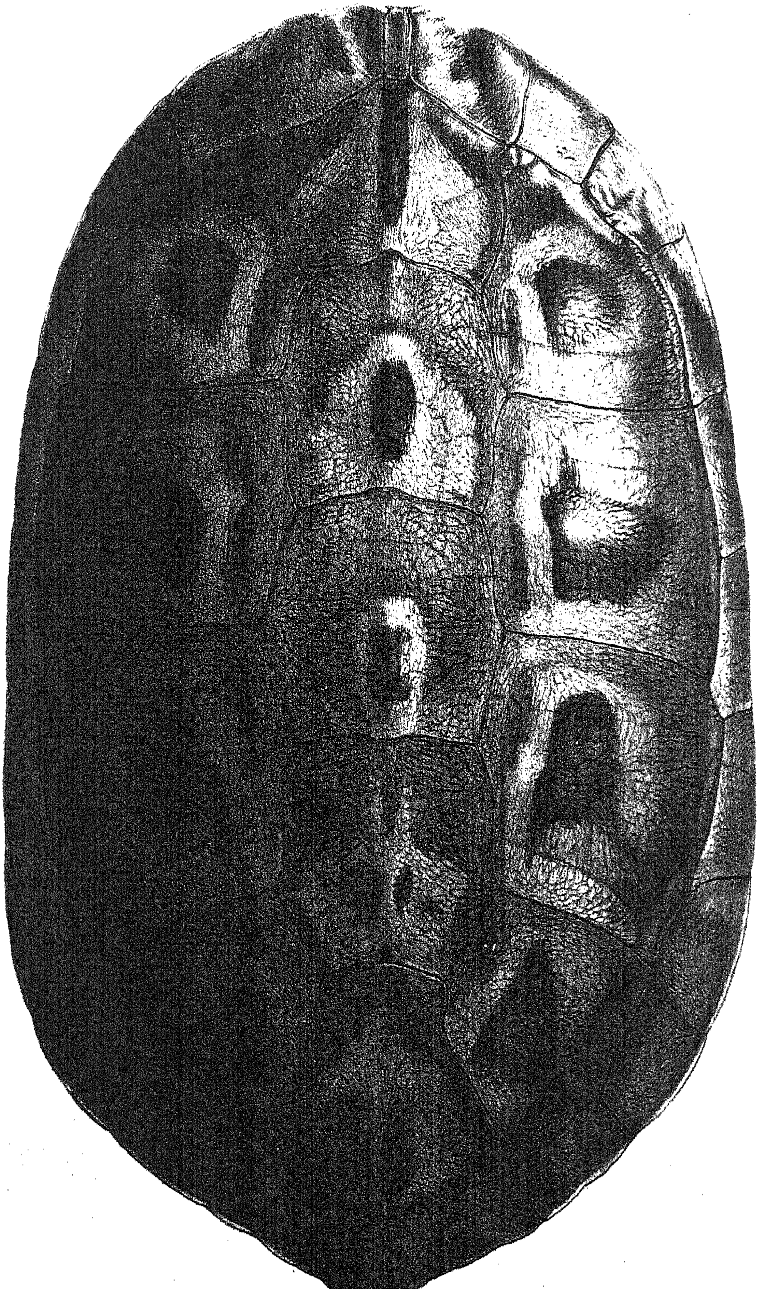

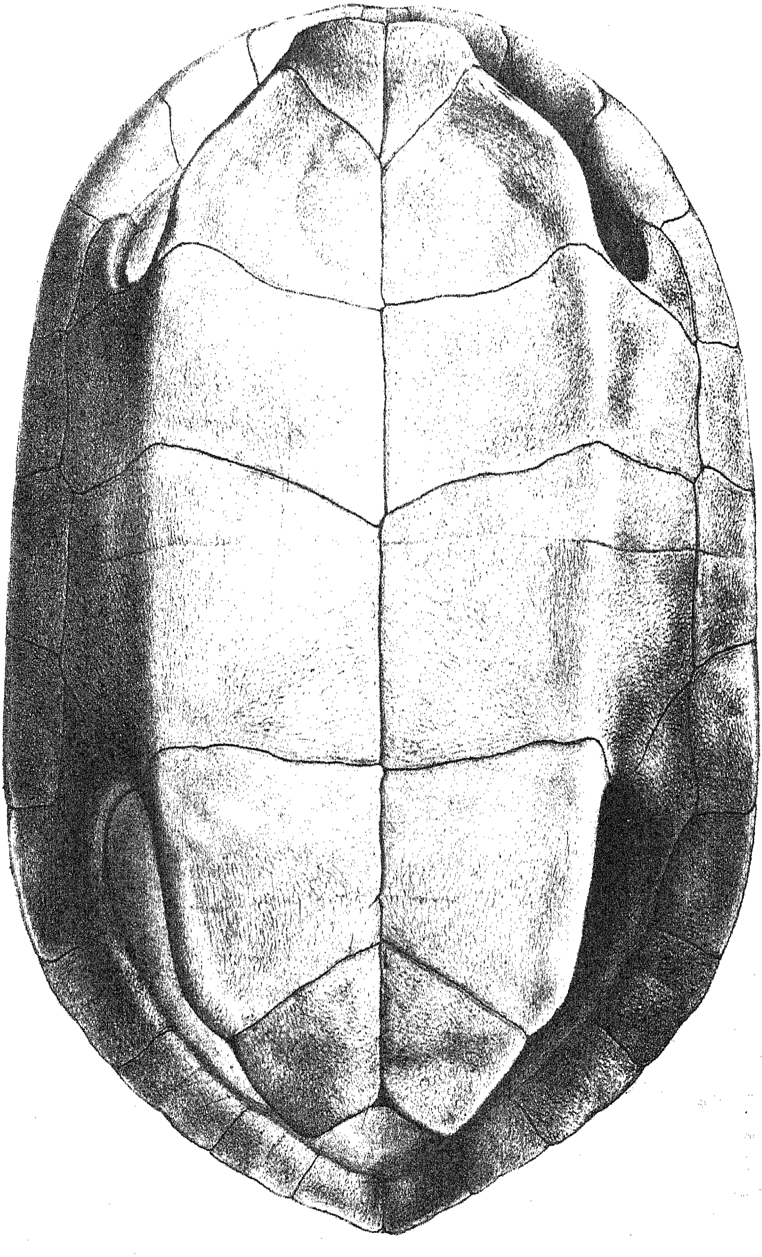

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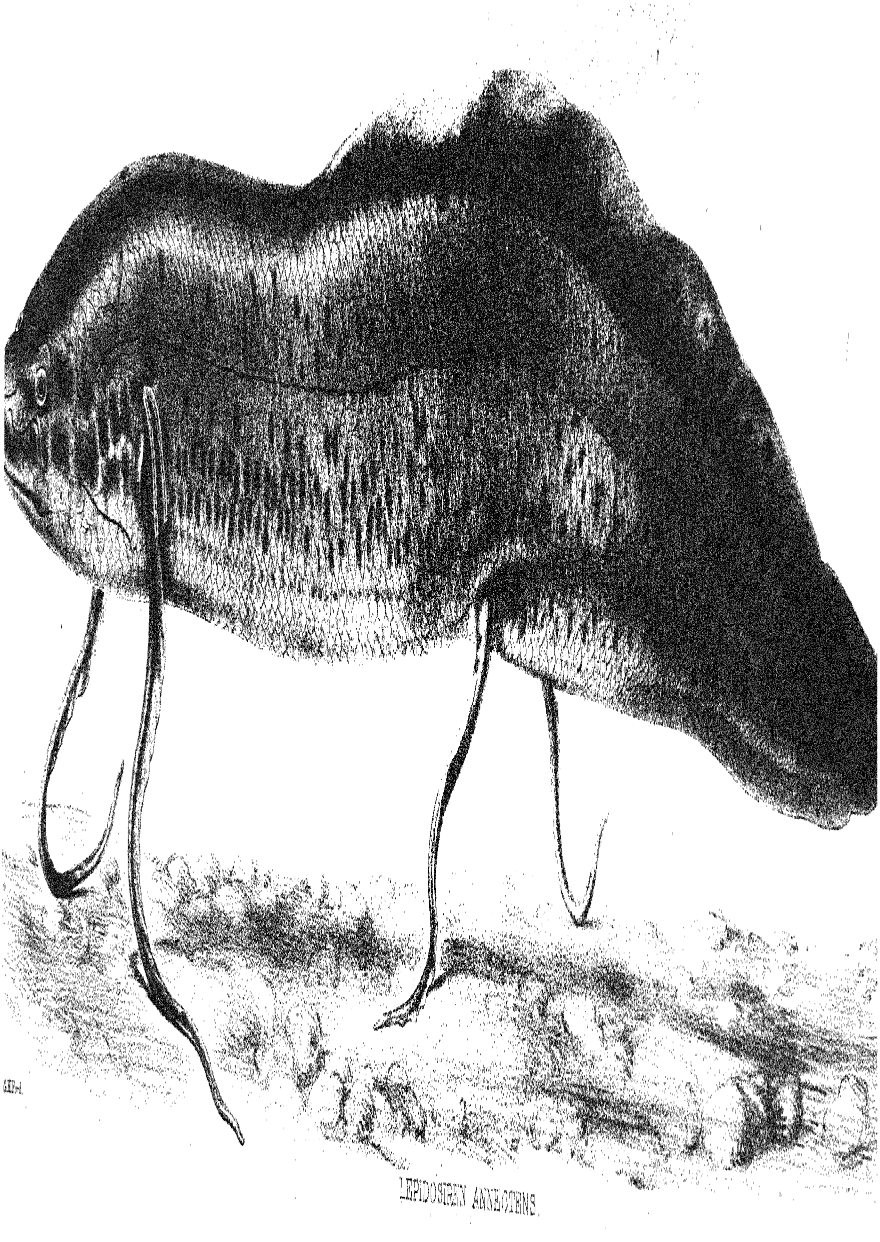

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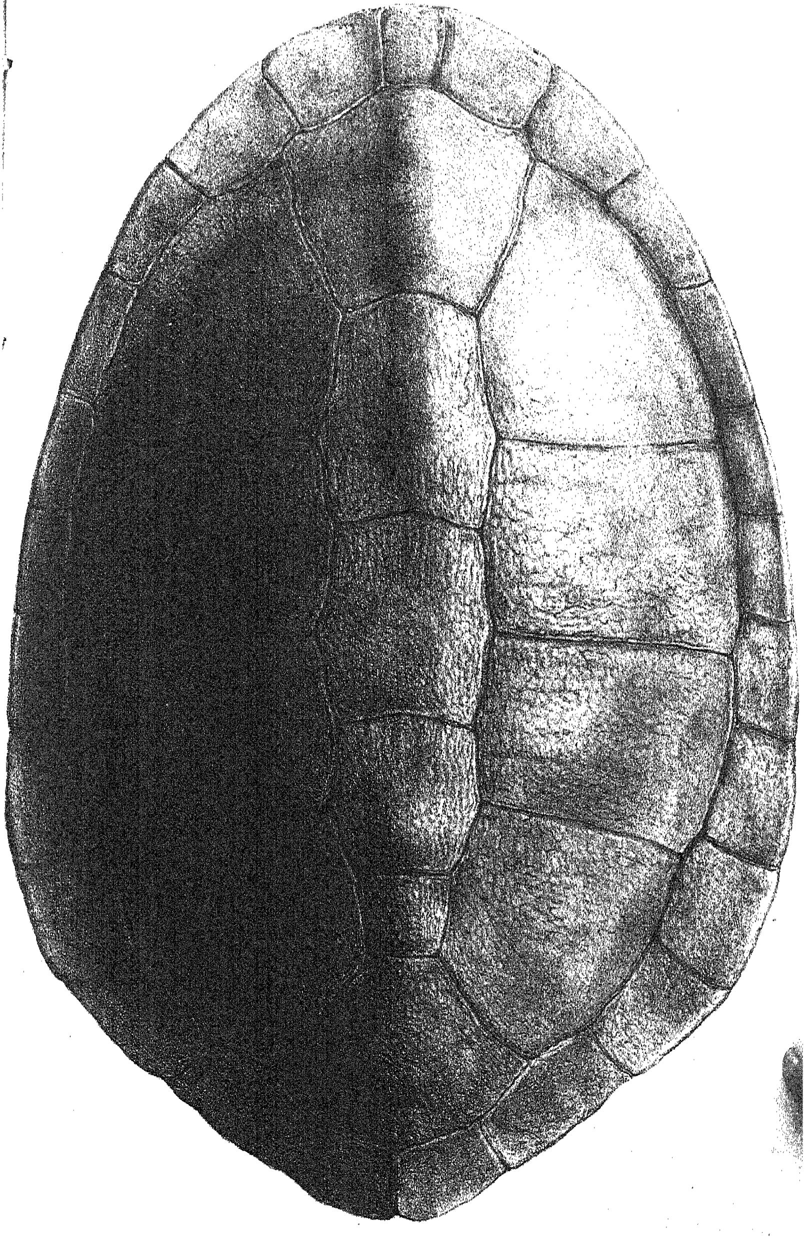

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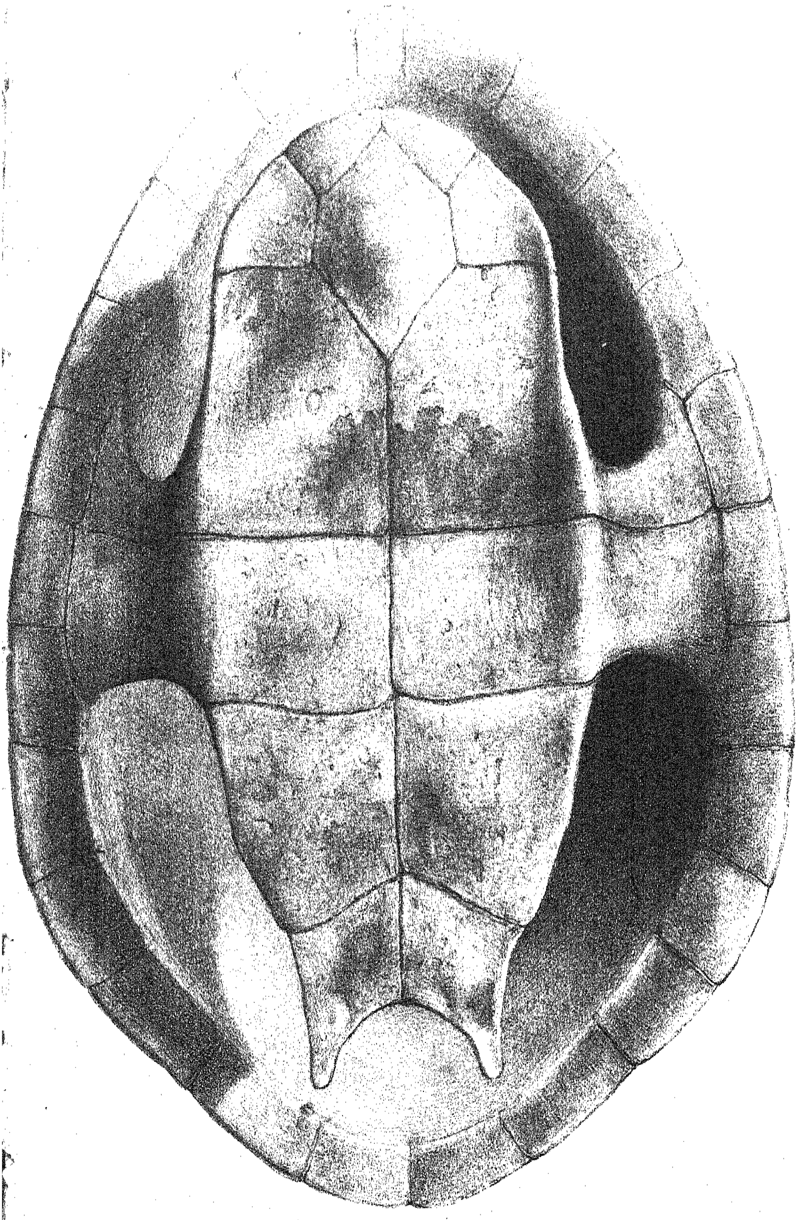

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